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QUESTIONS AND ANSWERS ON SMALLPOX AND VACCINATION

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The following questions are not infrequently asked by physicians in regard to variola and its prevention. Part of the answers given are supported by good evidence, part by conclusive evidence, but much, unfortunately, is only opinion, a personal weighing of such evidence as is at hand; yet each of the questions should have a tentative answer, according to the best light available. Further information may change the answers given here. Though for nearly every statement that can be made concerning smallpox some support can be found in the literature, a few of the observations here recorded are original. It is hoped that many of the gaps in our knowledge of smallpox and vaccination may soon be filled. Of all infectious diseases prevalent in the United States this disease is the most completely preventable by public health measures.

1. *What is the best method of vaccination?*

Probably the "multiple pressure or prick" method.[1] This consists of a shallow, tangential pricking of the cleansed, but not irritated, skin with a needle, through a drop of smallpox vaccine, covering an area not greater than one-eighth of an inch (3 millimeters) in diameter. This gives little chance of accidental infection and the eruption is typical. Acetone has been found satisfactory for cleansing the skin. It is somewhat more efficacious and rapidly drying than alcohol. The needle, which should be new, sharp, and sterile, is not

[1] Various names have been applied to different forms of this method, including "acupuncture," "multiple puncture," and the names of different individuals who have made slight modifications and have been responsible for its use. Perhaps the Suttons, of London, in the prevaccinal inoculation days (1763) were the first to attempt to deposit virus between the skin layers, and Jenner himself used a form of this method in some of his early vaccinations. Doctor Kinyoun, formerly of the United States Public Health Service, was chiefly responsible for the introduction of the method in a modern form, making oblique punctures with a needle instead of a lancet, and Dr. H. W. Hill, then of London, Ontario, described and popularized it by publication. As modified by myself and described above, this method differs in only two or three details from the method used by Kinyoun and Hill, principally in that the needle is held entirely parallel or tangential to the skin, and is pressed sidewise. A description was sent to Dr. Benjamin White, who published it in the Boston Medical and Surgical Journal of July 30, 1925. The second printed description of this method was that courteously distributed to physicians of Providence, R. I., later in 1925 by the dean of American health officers, Dr. Charles V. Chapin. The first accompanying illustration is by Doctor White.

None of the names suggested is sufficiently descriptive; "acupuncture" and "multiple puncture" both imply a driving motion of the needle through the skin layers instead of the simple pressure of the side of the point; even "prick" and "tattoo" are suggestive of a more direct puncture. "Multiple pressure" may best convey the idea.

thrust into the skin, but is held quite parallel or tangential to it, with the forefinger and middle finger of the right hand above the needle and the thumb below, the needle pointing to the operator's left. The needle should be crosswise of the arm so that the thumb of the operator is not impeded by hitting the skin. The side of the needle point is then pressed firmly and rapidly into the drop about 30 times within five seconds, the needle being lifted clear of the skin each time. This rapid to and fro motion of lifting the needle and pressing it against the skin should be quite perpendicular to the skin and needle, and not in the direction of the needle. In this way the elasticity of the skin will pull a fraction of an

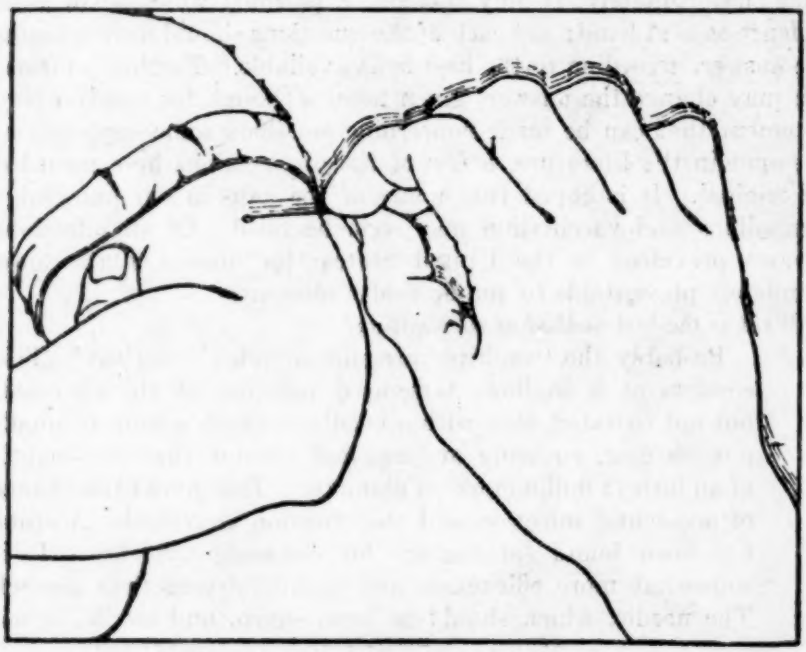

FIG 1.—The "multiple pressure" method

inch of the epidermis over the point of the needle at each pressure so that the vaccine is carried into the deeper epithelium (cuboidal prickle-cell layer), where multiplication takes place most easily. If the skin has not been unduly rubbed in cleansing, and if the motion is entirely perpendicular to the needle, no signs of bleeding will occur and all evidence of the punctures will fade out in less than 6 hours. Immediately after the punctures have been made the remaining vaccine is wiped off the skin with sterile gauze and the sleeve pulled down, the whole operation of puncturing and wiping taking less than 10 seconds. With strong vaccine a single pressure not infrequently gives a "take." Only 6 pricks or

punctures were formerly advocated; comparative tests showed this to be inferior to the scratch method in percentage of "takes." By the use of 30 pricks this difficulty has been

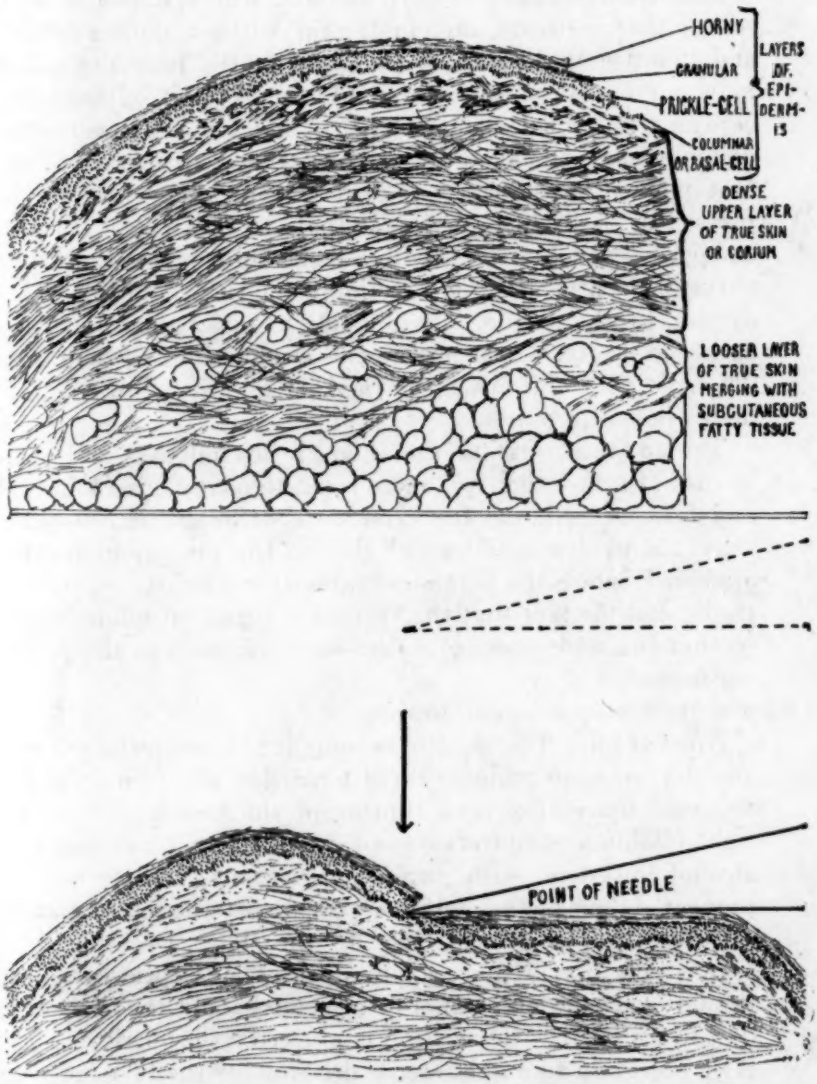

FIG. 2.—Diagrammatic sketch of pressure-prick method of vaccination. The upper illustration shows the relation of the skin layers before the pressure of the needle has been applied. The lower shows the motion of the needle from its first position above and parallel to the skin, as indicated by the dotted outline, to its final position pressing against the surface of the skin and entering it slightly. (Magnification, 25 diameters. To save space, the curvature of the surface of the arm is much exaggerated and the perpendicular distance which the needle moves is diminished in proportion to this magnification.)

overcome, and the percentage of "takes" is as high as with any other safe method. For primary vaccinations, where the mildest possible "take" is desired, and where other attempts

with highly potent vaccine will be made promptly if the first is unsuccessful, the number of "pricks" may be reduced to 10, or even to a single prick.

The disadvantages of this method, which it shares with some other methods, are, first, that without demonstration and practice the technique of applying the proper pressure may not easily be acquired, and second, that without due care an area larger than one-eighth of an inch (3 millimeters) in diameter may be covered by the insertion. In regard to the first point, the difficulty is usually that the needle is not pressed in the right direction or that the pressure is not firm enough. Provided the needle is held quite tangential to the curve of the arm, and the direction of motion is quite perpendicular to the needle, it is difficult to make the rapid pressures too firmly. In regard to the second point, motion from the wrist with the arm held rigid is usually more accurate than whole-arm motion.

The advantages of this method are its mildness and painlessness, the fact that it is more rapid than any other effectual and safe method, the fact that no control site is necessary, since the evidence of trauma due to the operation has disappeared before the first observation for an early reaction is made, and the fact that the vaccine is wiped off immediately, so that the uselessness of a dressing is obvious to the person vaccinated.

2. *What is the best vaccination dressing?*

None at all. The ideal to be sought is to keep the site cool and dry, so as to promote rapid formation of a firm crust and to avoid maceration and rupture of the vesicle. Heavy or tight clothing, perspiration, and even repeated washing with alcohol interfere with rapid desiccation. If necessary to prevent soiling of the clothing, a fold of sterile gauze may be attached to the garment, not to the skin. Occasionally a severe take may require a few days of antiseptic dressings; primary vaccinations should be inspected about the fourteenth day to insure that desiccation is proceeding properly. There is no objection to a light sterile dressing for the first few days after vaccination, provided the arm is under constant competent surgical attention and maceration is prevented, but such provision is seldom assured.

3. *Are there any objections to vaccination on the leg?*

Yes. Leg vaccinations are exposed to more moisture, and to more contamination from street dust, than vaccinations at the region of the deltoid insertion. On account of blood stasis, primary leg vaccinations in adults are often accom-

panied by a purplish discoloration, and result in a large, slowly healing ulceration; they usually cause temporary disability. Vaccination on the arm when performed by the multiple-pressure method described above causes no disfigurement; the resulting vaccination scar is definite and typically pitted for inspection purposes, but hardly noticeable otherwise except as a "sanitary dimple."

4. *Is early surgical treatment of the vaccination vesicle satisfactory, such as opening and applying antiseptics?*

Yes; provided constant, competent care is exercised thereafter until healing is complete. However, the maximum immunity is not obtained until the red areola has reached its greatest diameter and begun to fade.

5. *Are any other methods of vaccination and treatment satisfactory?*

Any method is satisfactory which insures that the vaccine is deposited in the deeper layers of the epidermis with no more injury and over no greater an area than by the pressure method (not longer than one-eighth inch or 3 millimeters in any direction), and which avoids poulticing the developing vaccination. With any scarification method, to secure the maximum number of "takes" possible with the virus used, the vaccine should be rubbed in with the side of the scarifier or with a sterile toothpick for at least 15 seconds. Dr. Chas. Armstrong has rightly suggested that even after open scarification the vaccine be immediately wiped off following this rubbing in, to avoid softening of the skin or subsequent maceration from the glycerin.

6. *Are there any objections to the intracutaneous injection of diluted vaccine virus?*

Yes. It is likely to be more painful than the method described above, and in many instances, even in good hands, the injection will be subcutaneous rather than intracutaneous; subcutaneous applications of smallpox vaccine give reactions which are different from ordinary vaccinia and are not to be differentiated from reactions following other injections, so that one is never sure of the potency of the vaccine being used.

7. *How may the various reactions following smallpox vaccination be differentiated?*

By observation 2 days after vaccination and twice later, about 4 and 8 days after vaccination, and by the cooperation of the person vaccinated to observe when the maximum reaction is reached. With a reaction of immunity, which indicates full protection against smallpox, the broadest redness is reached and passed in 8 to 72 hours after vaccination. This redness is accompanied by a slight elevation of the

skin, which can be felt by passing the finger lightly over the vaccinated area. With the accelerated or modified vaccination or vaccinoid, which indicates partial immunity, the broadest redness is reached and passed in 3 to 7 days after vaccination. With a typical primary vaccination, indicating absence of immunity to smallpox prior to this vaccination, the zone of redness, rather narrow from the third to the seventh day, begins a sudden spread about 7 days after vaccination and reaches its broadest diameter in 8 to 14 days after vaccination, rapidly disintegrating and disappearing thereafter. These three types merge into each other, all gradations being found in practice; differentiation into the three types is based on the time of broadest redness. The prompter the

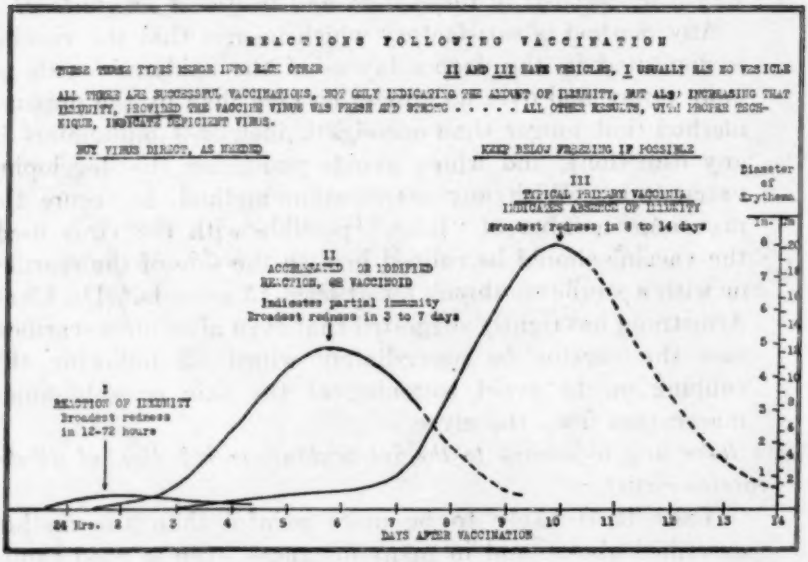

FIG. 3.

maximum the higher is the immunity. Vesicles are formed in vaccinoid and typical vaccinia reactions, but not with the reaction of immunity. The vesicle of a typical vaccinia, and of many vaccinoid reactions, has a turbid, whitish appearance, but if properly cared for does not become a true pustule, and dries up and heals promptly after the height of the reaction is reached. The characteristic pitted scar is red at first and gradually becomes white. Scars of vaccinoids are much less marked, and reactions of immunity usually leave no scar. All three of the types are successful vaccinations provided the smallpox vaccine was fresh and strong. All three not only indicate the grade of the previous immunity, but increase the immunity as well. All other results, where proper technique

was used, indicate deficient vaccine. Every vaccination should give a reaction.

8. *What untoward results from vaccination are to be looked for?*

With aseptic technique and a small insertion site which is kept dry and cool, the great majority of vaccinations go through their typical course and heal promptly if the crust is left undisturbed. The freest possible access of air currents and the natural friction of the clothing seem to promote firmness and rapid crust formation in the superficial skin layer of the vesicle. Particular care that all precautions are taken should be exercised in *primary* vaccinations, as Surg. Chas. Armstrong has pointed out.

Rarely, due possibly to skin bacteria which can not be removed by the preliminary cleansing, the vesicle will become purulent and extend beyond its normal diameter, which is not over three-eighths of an inch (10 millimeters) greater than that of the insertion site, the drying up of the vesicle and the fading of the areola being thereby delayed. Opening of the pustule and the temporary application of some strong antiseptic, such as mercury bichloride solution, should be practiced if this takes place. As soon as a fair-sized areola has formed, the maximum immunity against smallpox has been attained, and the use of an antiseptic will not diminish the vaccinal protection. In general, temporary moist dressings are to be preferred to powders or ointments. Occasionally the vesicle may soften or accidentally rupture, or the crust be knocked off, in which case also temporary dressings may be indicated, but the formation of a firm, unprotected crust should be favored as soon thereafter as possible. For some infants a roomy sleeve fastened to the neck and wrist may be useful to keep out the finger nails.

Accessory vesicles around the vaccination site may in some cases be caused by too vigorous cleansing of the skin prior to vaccination. The virus may also be transferred to scratches or other skin lesions, giving rise to distant vesicles.

True generalized vaccinia practically never occurs. Eruptions at about the time of the maximum reaction or later are not at all infrequent. The earlier eruptions are likely to be morbilliform, some simulating the skin lesions of measles very closely. The later eruptions are more like erythema multiforme. These incidental eruptions are not troublesome after their diagnosis is understood, and they disappear promptly without treatment.

The four most common failures in vaccination, from virus of insufficient potency, are a total lack of any reaction, a

sluggish, imperfect reaction not conforming to any of the three types described in the answer to question 7, an early reaction similar to a reaction of immunity in those who should give a vaccinoid, and the spurious reaction variously known as the keloidal, the mulberry of Seheult, or the paravaccine of Pirquet. This last is a reddish or purplish papule looking somewhat like granulation tissue, rather slow in appearance and often persistent; it gradually disappears without treatment.

To guard against complications use aseptic technique, insertion sites not more than one-eighth of an inch (3 millimeters) in diameter, keep the arm dry and cool, and (in first vaccinations) inspect after 9 to 14 days.

To guard against failures use fresh vaccine that has been kept very cold, and in case of doubt as to potency, vaccinate at more than one site, keeping each site of the minimum size.

9. *How can one tell whether the vaccine used is of full potency?*

A fair test that the vaccine is of full potency is that when properly applied it gives 100 per cent of vaccinias (typical "takes") in every application on at least 100 previously unvaccinated individuals. A more practical test is that it should give more than 50 per cent of vaccinoid reactions in persons who have been vaccinated or have had smallpox over 10 years previously, and immunity reactions or typical vaccinias in the remainder; a much smaller number of individual vaccinations will give a good idea of the potency of a batch of vaccine by this test.

10. *How cold should smallpox vaccine be kept?*

The colder the better; well below freezing if possible. Icebox refrigeration is not cold enough for this purpose. Smallpox vaccine can not be injured by freezing, as can serums and other vaccines. Even a whole day out of cold storage, in addition to the necessary transportation from the manufacturing laboratory, may produce detectable deterioration in potency. Smallpox vaccine which has been out of cold storage so that it gives only about 80 per cent or 90 per cent of successful vaccinations on previously unvaccinated individuals may be satisfactory in ordinary outbreaks of smallpox or in routine vaccinations, but in the presence of severe smallpox or when reactions of immunity are to be observed the vaccine should be obtained direct from the manufacturer and kept below freezing. In an electric refrigerator the smallpox vaccine should be kept in an ice-making compartment. Next best to storage below freezing is placing the vaccine in a metal or glass container which presses against a block of ice. If a vacuum bottle is used for transporting smallpox vaccine the inside of

the bottle should be packed with ice around the vaccine. Fortunately, severe outbreaks of smallpox tend to occur in cool weather, and cause sufficient demand for the vaccine so that it is shipped very directly from the manufacturing laboratories and is used rapidly. In the presence of severe smallpox, when there is uncertainty as to the potency of the vaccine, vaccination should be performed at more than one site, at least an inch apart, preferably with vaccine from different sources. Batches differ in their keeping qualities, but in recent years smallpox vaccine has with uniformity been found to be satisfactory as it leaves the manufacturer.

11. *Does a red, slightly raised area, observed at the site of vaccination 48 hours after vaccination is performed, necessarily indicate that the person vaccinated was immune to smallpox?*

No; there are three other possibilities:

(*a*) The most frequent of these is that the vaccine used had been weakened by time or temperature, so that, while still able to give the reaction described above, it did not go on to the production of a more marked reaction (vaccinoid), as would a vaccine of full strength if used on the same person. Ordinary ice-box refrigeration is not cold enough for the storage of smallpox vaccine which is to be used in testing immunity.

(*b*) Accelerated reactions (vaccinoids) usually give at early inspection (second day) the appearance described above, which is similar to that of a reaction of immunity. Thus, even if an early reaction is observed, subsequent observation, as on the fifth or seventh day, is necessary to determine whether the reaction was that of immunity, with its maximum diameter of redness reached in less than 3 days, or an accelerated reaction (vaccinoid) with later maximum. Even a vaccinoid reaction, however, indicates some immunity. Some true vaccinias may show an early reaction, especially if there have been previous unsuccessful attempts at vaccination. Early reactions are more clearly apparent with the multiple pressure method than with other noninjection methods on account of the absence of injury to the true skin and the consequent absence of an obscuring traumatic reaction. Temperature changes, skin irritation, and other conditions may cause fluctuations in the diameter of the reaction, and there may even be an almost entire subsidence, giving rise to two maxima. In this case the later maximum indicates the true character of the reaction. The only safe rule for determining which of the three types of reaction occurred is repeated observation, as explained in the answer to question 7.

(*c*) The trauma due to the mere mechanical act of vaccination may cause enough irritation so that the redness persists at the time of the early 48-hour observation, independently of any specific reaction. To obviate falsely reading such redness as a reaction of immunity, it is necessary either to treat another site as a control, with exactly the same degree of trauma but without applying the vaccine, or, preferably, to use a method such as the "multiple pressure," which leaves no traumatic reaction after 6 hours to obscure faint reactions of immunity.

An early reaction can be called a true reaction of immunity only when pure smallpox vaccine has been used and these three other possibilities have been eliminated.

12. *In the reaction of immunity is the grade of immunity indicated by the amount of the reaction?*

No. The *time* after vaccination within which the local area of redness and infiltration of the skin reaches its maximum and begins to subside, and not the amount of this redness and infiltration, is the index of immunity. The quicker the maximum is reached and passed the higher is the degree of immunity indicated. The *amount* of the reaction depends on the skin reactivity of the person vaccinated, and not on the grade of immunity. It is probable that any reaction which is marked within 24 hours will reach its maximum in less than 72 hours, and therefore would constitute an immune reaction, but some of the most highly immune persons give the smallest reactions.

13. *May not the reaction of immunity be an ordinary protein reaction, such as is given, for example, by pollen proteins?*

The protein reactions as shown by the usual skin tests (not subcutaneous) have an altogether different time relation from that of the reaction of immunity to smallpox. The former are rapid, appearing and reaching their maximum within about one-half hour, while the reaction of immunity to smallpox reaches its maximum in not less than 8 hours after vaccination, and usually in more than 24 hours after vaccination. The protein reaction has faded before the reaction of immunity has begun to appear.

14. *How often should one be vaccinated against smallpox?*

Ordinarily once in every 5 to 10 years, so that a maximum protection is maintained without the inconvenience at any time of a reaction more severe than the immunity reaction, except for the original primary vaccinia. Vaccination of infants is attended with less general reaction and fewer complications than vaccination of older children, so that

vaccination is advisable as soon after birth as practicable, preferably before teething. Unless tight underclothing is worn over the arm, winter and spring are more suitable seasons than the warmer parts of the year. Though young babies often require a more potent vaccine than others to insure a successful "take," there are four advantages to be gained by vaccinating a child during infancy rather than waiting until later; first, the "take" is apt to be milder and freer from the dangers of complications, such as tetanus; infantile vaccination usually gives rise to no inconvenience whatever; second, it tends to make the secondary vaccination, required at school age, a much milder affair than if the school vaccination were primary; third, protection against smallpox is gained for the preschool runabout years; fourth, the scar of an infantile vaccination fades more completely than scars of primary vaccinations performed later. Provided the subsequent revaccinations result in vaccinoids or immune reactions, as may be expected, one thereby secures lifelong complete protection against smallpox without any severe reaction at any time and with only an inconspicuous scar.

Immunity afforded by vaccination is lost by different individuals at different rates. The ability to ward off an attack of smallpox may be compared to proficiency in a foreign language. Such proficiency may be first acquired during early life and lost gradually, more rapidly in some individuals than in others. Some individuals need to be vaccinated more often than once in 5 years to maintain full protection and always to secure as the result of such vaccination merely an immunity reaction. Others may be vaccinated less frequently than once in 20 years and still maintain high immunity. It is a good plan to be revaccinated whenever one can be assured of a fully potent virus being used, so that the resulting reaction can be interpreted with certainty as showing a definite grade of immunity. On the basis of such a reaction, with the knowledge of the individual's previous vaccination history, one can often advise as to how frequently in the future that individual should be revaccinated.

The chance of taking the disease varies with the intensity of exposure and with the severity of the strain of smallpox to which one is exposed, as well as with the individual susceptibility. Those health officers who are continually exposed may need more frequent vaccination than the public at large. There is some evidence to show that infants and members of the colored races tend to lose their immunity more rapidly

than others. A primary vaccination with one successful revaccination, or even a single successful vaccination, will as a rule protect throughout life from the milder forms of smallpox, but this is far from being true in the severer outbreaks. Second attacks of smallpox are rare, but do occur. If there is danger of exposure to a severe form of smallpox all persons who have not been vaccinated within one year successfully, that is, with vaccine known to be of full potency, should be vaccinated.

15. *Does the degree or length of immunity following vaccination depend on the size or number of scars?*

To some extent, but not enough to make it worth while to undergo the inconvenience, the retardation of healing, and the risk of infection from a vaccination insertion larger than the smallest one which will insure a successful "take." Immunity depends much more on the recency of vaccination with potent virus than on the size or number of vaccinations at any one time.

16. *What are the contraindications to vaccination?*

In general, skin diseases, particularly eczema, are the only conditions which will justify school attendance and at the same time be contraindications to routine vaccination. This is on account of the danger of diffuse vaccinia from carrying the vaccine into the open lesions of the skin disease, or the danger of contaminating the vaccination site if the skin lesions are purulent. Patients with such diseases as tuberculosis are in no wise harmed by properly performed vaccination. Acute infectious diseases may cause a vaccination "take" to be delayed or atypical, but are not in themselves contraindications in case of possible exposure to smallpox. There is a curious relation in leprosy which tends to cause the lighting up of leprous lesions during the course of the vaccination, but which may promote more rapid healing thereafter. Serious lymphomatous diseases, including lymphatic leukemia, may be made worse by vaccination.

17. *Will a nonimmunized person contract smallpox if exposed to the disease?*

By no means uniformly. Exposure to smallpox, especially to the milder forms, without contracting the disease frequently occurs and is no definite evidence of immunity. The number of cases of smallpox among the unprotected persons in contact with patients suffering from the disease is very much less than 100 per cent.

18. *Does the failure of a vaccination to "take" indicate protection?*

No. Differences in skin receptivity may occur independently of the condition of the individual as regards true immunity. For example, very young infants are not as easily vaccinated as older children, yet they are susceptible to smallpox and when successfully vaccinated give a typical vaccinia. Some individuals may be resistant, in the same way, to a lot of vaccine which gives "takes" generally in other individuals, but are not immune against smallpox when exposed, nor against vaccination when a fully potent lot of vaccine is used.

19. *How long after exposure to smallpox is it worth while to be vaccinated in order to hope that the attack may be warded off?*

In some smallpox hospitals every person is vaccinated on admission, to guard against the danger from exposure in case of error in diagnosis. Successful vaccination performed on the day of exposure will almost always give complete protection against the smallpox attack, and vaccination up to a few days before the onset at least makes the attack milder than it would otherwise have been. Vaccination during the few days before onset will allow the vaccination and smallpox eruption to develop simultaneously without either influencing the other.

The successful development of a vaccination performed after the eruption has appeared is commonly held to be incompatible with the diagnosis of smallpox. Vaccination may, however, rarely appear to be successful if performed as late as the fourth day of the eruption, and it is astonishing how soon after smallpox or vaccination some exceptional individuals lose their immunity to vaccination. Three circumstances may cause confusion in regard to coincident smallpox and vaccinia: A vaccination performed in good time to prevent the smallpox attack may have been done with vaccine somewhat under full potency, and development of the typical vaccinia may be abnormally delayed until stirred up by the oncoming smallpox; or the vaccine may have been entirely impotent and the developing eruption of variola may appear first at the irritated vaccination site, simulating true vaccinia. A late vaccination may in the same way result in a localized variolous patch at the vaccination site, or the late vaccination may give a modified or immune reaction due to the increasing smallpox immunity.

The discussion given above applies to primary vaccination. If the individual has some immunity from a previous vaccination the secondary vaccination may be protective though performed at a somewhat longer period after exposure.

20. *What are the most important points in the diagnosis of smallpox?*

The diagnosis of smallpox may in some cases be difficult for the most experienced, but in order of their importance the most important diagnostic points are the distribution of the eruption, the individual lesions, the course of the disease, and inoculation tests. Of these four points the first two are of especial value because they are immediately available at first inspection of the patient. On account of its contagiousness smallpox should be diagnosed as promptly and as certainly as possible. The characteristics of the distribution are the most uniformly valuable of all the criteria of diagnosis, and are useful at almost any stage and in almost any case. Even in the mildest cases, with only a very few lesions, a count of the number on each part of the skin surface will usually give the clew to the correct diagnosis. It is to be remembered, however, that smallpox is a general disease, and that the eruption is symmetrical and not local.

The usual *distribution* of the smallpox eruption, general and in detail, and the character of the individual *lesion*, are shown by the following table (modified from T. F. Ricketts) of differences between the smallpox eruption and the chickenpox eruption:

SMALLPOX	CHICKEN POX
(*a*) Favors prominences, extensor surfaces, and surfaces exposed to irritation; tends to avoid protected surfaces, flexures, and depressions.	(*a*) Is distributed indifferently in general, though not infrequently the eruption is especially thick over some particular area of the skin where there has been irritation.
(*b*) The forearms and wrists have a thicker eruption than the upper arms.	(*b*) The proximal part of the limbs have more of the eruption than the distal.
(*c*) Most abundant on face, most scanty on abdomen and chest.	(*c*) The abdomen and chest are covered as thickly as the face, or more thickly.
(*d*) More abundant on the back than on the abdomen.	(*d*) The abdomen has as many lesions as the back.
(*e*) More abundant on the shoulders than across the loins, and on the chest than on the abdomen.	(*e*) The distribution is indifferent as regards these regions.
(*f*) The eruption favors the limbs and generally the arms next to the face.	(*f*) Tends to avoid the limbs.
(*g*) Except when modified naturally or by previous vaccination, the lesions are deep-seated and have an infiltrated base.	(*g*) Unless they have become infected, the solitary lesions on the more protected parts of the body are superficial and the base is not infiltrated, so that the entire lesion tends to collapse on pressure.

(*h*) The solitary lesions on the more protected parts of the body are generally circular in outline.

(*i*) The lesions tend to be all of the same sort at the same time, or if they are different, the smaller the lesion and the nearer it lies to the face the more advanced in development it should appear to be. In cases of modified smallpox the lesions are likely to vary greatly in size.

(*h*) The lesions frequently have an irregular outline; when they lie near a flexure they are apt to be oval or elongated.

(*i*) Lesions at various stages of development may be found simultaneously, irrespective of their location or size.

The above description applies solely to the lesions of the characteristic eruption of smallpox, which go through the stages of papule, vesicle, pustule, crust, and scar, and not to the early rashes, erythematous or purpuric, which are seen rarely during the febrile stage preceding the real smallpox eruption, and which may in the most severe toxic cases constitute the only eruption prior to death.

Any case of purpura or hemorrhage with fever is likely to be smallpox and should be so considered as regards isolation, and immediate vaccination of "contacts," until another diagnosis is clear.

Otherwise presumptive diagnosis, before the characteristic eruption, can be made only in case of an acute febrile onset about 12 days after known or possible exposure to smallpox.

In very severe cases or in debilitation from any other cause the lesions of the true smallpox eruption are often imperfectly filled out.

The *course* of the disease with the gradual but continuous progress of each individual lesion is perhaps the most definite criterion in smallpox diagnosis, but, unfortunately, requires prolonged observation. The incubation period from effective exposure to onset is usually 8 to 18 days, tending to be longer with the milder strains. There are 1 to 5 days of febrile symptoms before the eruption, making the total time from exposure to the beginning of the eruption about 14 days. The eruption is papular for 1 to 4 days, vesicular for 1 to 4 days, pustular for 2 to 6 days, and the crust which forms falls off about 14 days after the first sign of the lesion, leaving a red, finely pitted scar, which very gradually becomes white during the ensuing months or years. Lesions appear first on the more exposed or irritated surfaces, as the forehead, face, and hands, and usually appear last on the lower extremities, perhaps several days later. In general, the more severe the

case the slower the progress of the lesions, while mild cases may go through their course rapidly and leave practically no scars.

The *inoculation* of a rabbit's cornea with the contents of the vesicles or pustules, followed by enucleation of the eyeball 40 to 72 hours after inoculation, fixation in strong sublimate alcohol, and examination for the characteristic whitish papules and the microscopic Guarnieri bodies in the corneal tissue (Paul's test), is the most useful laboratory procedure in the diagnosis of smallpox. This also consumes valuable time, and furthermore has an element of uncertainty on the dangerous side; that is, the atypical cases of smallpox (atypical by reason of the stage at which they are seen, or by reason of their modified character) are likely to give negative Paul reactions, causing a dangerous implication of security.

Though smallpox is unquestionably many times more frequent in the unvaccinated than in those who have had even a single vaccination, it is believed that neither the vaccination history nor the presence of scars should be given diagnostic weight. The unreliability of such a criterion is especially evident in virulent outbreaks of the disease.

21. *What effect does previous vaccination have on smallpox?*

If recent, the vaccination will protect against the disease entirely.

If the protection is not quite complete, on account of the vaccination having been performed too long before, the toxic early stages of the disease are the first to come out from under protection, and the resulting illness may have a fairly severe febrile onset for two or three days, though the following eruption be scanty and the indisposition trivial. The purpuric, uniformly fatal, form of smallpox is the most difficult to prevent by vaccination, and cases of this form, without a true smallpox eruption, may occur in persons with a fairly good vaccination history. The incidence of cases of this form depends on three factors—inherited predisposition, severity of the strain of smallpox, and immune status (remoteness of last vaccination).

If the protection is even less in degree, insufficient to cause much reduction in the number of the smallpox lesions, the individual lesions themselves may still be modified by the vaccination of long before, so that they are smaller or more diverse in size, and more superficial, with a resulting lessened severity.

As a result of all these modifications, in attack, in number of lesions, and in the character of the lesions, vaccination lowers

the death rate from smallpox per 100,000 population even more than it lowers the incidence rate.

22. *Is there another contagious eruptive disease, intermediate between smallpox and chicken pox in severity (variously called alastrim, milk pox, amaas, or varioloid varicella), which might be mistaken for either of these two diseases?*

No. Outbreaks of smallpox occur of all grades of severity, some with a mortality of 70 per cent among those attacked and some with a mortality of 0.01 per cent. Since 1896 a mild form has been increasingly prevalent in the United States and countries in communication with the United States, having a fatality of about 0.1 per cent among the unvaccinated. The strains of the disease present just previously had been much more severe, and from time to time outbreaks are now occurring with a fatality rate of about 30 per cent in the unvaccinated. Each of these strains in general breeds true to its respective type, and mild cases contracted from severe give rise in turn to severe and fatal cases. There is no definite grade of severity or of fatality that we can consider characteristic of smallpox, and it is probable that almost all of the epidemics called "alastrim," etc., have been mild forms of smallpox. All forms of smallpox immunize against each other and all may be prevented by the same vaccination. Exposure to a severe form is much more likely to give rise to infection than exposure to a mild form, and it takes a higher grade of vaccinal immunity (more recent vaccination) to protect against a severe strain than against a mild strain. In moderately well vaccinated communities, such as Germany, epidemics of mild type are entirely prevented and outbreaks of severe type much diminished. On the other hand, in poorly vaccinated communities, where isolation is nevertheless practiced, such as England and the greater part of the United States, mild strains spread more diffusely than severe because they are not taken so seriously by those attacked nor by the public at large, and because the attack is not severe enough to keep the patient in bed and isolated. The mildness of the form of smallpox commonest at present is one reason for endeavoring to make preventive vaccination as harmless and as mild as possible.

23. *Is vaccination alone a sufficient weapon for fighting smallpox?*

No. Prompt recognition and rigid isolation of the cases, as well as the tracing out of "contacts," should also be carried out to stop the spread unless the outbreak is very mild and in thinly settled regions. Cases, and even fatalities, occur in

every severe epidemic among persons who were vaccinated in good time but with vaccine found, too late, to be of insufficient potency; such cases and fatalities also occur among persons thought to be protected by successful vaccination performed years previously. This presumption of protection, upon reconsideration apart from the fact that smallpox was contracted, is found to be based upon mistaken or ill-considered evidence. Probably the most infective stage of smallpox is the early stage, when lesions are present in the mouth, nose, and throat. "Return" cases, contracted from cases released too early from hospitals, are unusual, but the crusts are infectious, and patients should not be discharged from isolation until the skin, including the soles of the feet, is free from the primary crusts of the eruption. This may be within three weeks after the onset. The infection may be carried by inanimate objects which have been contaminated from cases of the disease, but such infection is not persistent.

Epidemics can not be stopped by isolation without vaccination, nor prevented without required vaccination.

HEALTH OF THE SCHOOL CHILD IN ENGLAND AND WALES

A Review of the Eighteenth Annual Report (1925) on the School Work of the Board of Education

The duties of the School Medical Service of England and Wales fall under the following three main headings: (1) Inspection for discovery of defects and disease; (2) curative measures; and (3) preventive measures.

For these purposes are required a staff of doctors, dentists, nurses, and clerks with requisite premises and equipment.

Inspection includes—(1) The annual routine medical examination of three age groups: (*a*) Entrants, (*b*) all pupils over 12 years of age in secondary schools, and (*c*) special cases outside the routine groups; (2) follow-up and reexamination of all children previously examined and found with defects; (3) dental examination of all younger children with annual reexamination; (4) examination of all children periodically by nurses for cleanliness.

Curative measures include arrangement for treatment of minor ailments, defective eyesight, dental disease, diseased tonsils and adenoids, skin diseases.

Preventive measures are the most vital of all service rendered by school medical workers. The remedy of defects was the intent of

the law, but more should be done. The child must be trained in health; the body and mind are to be prepared for healthy growth.

The crucial test of medical service to school children is the enduring benefit of good health in later life.

Approximately 5,000,000 children attend the elementary schools in England and Wales; 1,798,397, or more than one-third, were examined in the routine method; 820,953 more were inspected as special cases, making a total of 2,619,350 children examined.

The staff required to do this was—

(*a*) School medical officers, whole-time	261
Officers for school and public health, whole-time	567
Part-time officers	312

This made approximately 1 whole-time medical officer to 8,500 school children.

(*b*) School nurses, whole-time	1,166
Nurses, part-time for schools	1,317
Nurses, part-time	42
District nurses	1,995

This is equivalent to 1,745 whole-time nurses for school work, or 1 to 2,950 children.

(*c*) Dentists, whole-time for school work	259
Dentists, part-time for school work	325

This is equivalent to 354 whole-time dentists, or 1 to 14,000 children.

(*d*) Specialists, whole-time for school work	16
Specialists, part-time for school work	770

The comparison of the children of England and Wales with the London children is interesting in that the children of London show less defects.

TABLE 1.—*Comparison of percentage of pupils in the elementary schools requiring treatment in England and Wales (exclusive of London) and in London*

Group	Percentage of children found to require treatment	
	England and Wales (excluding London)	London
Code groups:		
Entrants	23.1	16.7
Intermediates	26.8	20.0
Leavers	24.5	20.3
Total (code groups)	24.6	18.7
Other routine inspections	26.0	17.1

To the figures on which these rates are based should be added the defects of the "special cases" referred for treatment, which brings the total number of children found in need of treatment during the year to approximately 800,000. Table 2 gives the incidence per 1,000 inspected, of the more important defects, sufficiently severe to require treatment.

TABLE 2.—*Incidence of the more important defects, sufficiently severe to require treatment*

Group	Routines (incidence per thousand)	Specials (incidence per thousand)
Malnutrition	9.5	8.3
Defective vision	54.7	73.0
Squint	9.1	12.2
Other eye diseases	9.5	53.7
Defects of hearing	5.4	9.8
Otitis media	6.3	25.0
Enlarged tonsils and adenoids	53.3	47.6
Other throat and nose defects	6.2	22.0
Organic heart disease	2.2	3.0
Pulmonary tuberculosis—		
(*a*) Definite	.5	2.1
(*b*) Suspected	1.6	5.1
Nonpulmonary tuberculosis	1.1	4.1
Deformities	7.1	8.6
Nervous diseases	1.8	7.1

In the follow-up work, upon which depends the success of corrective treatment, great importance is given to the necessity of securing the cooperation of the head teacher. It seems that he wields an enormous influence in the community. The value of the nurse for follow-up work is well known and needs no comment.

The arrangements for treatment for dental and eye defects and diseased ears, tonsils, and adenoids is a great problem. School clinics have developed rapidly, there being now 1,395 of these. Hospital facilities for treatment of these defects have been provided in 486 hospitals by 242 different local school authorities.

A few figures on the number of defects found and treated are significant. It was estimated that 80 per cent of the children found with visual defect were given proper treatment; 178,542 children were refracted. Of 134,880 children with diseased tonsils, 60,871 (or 45 per cent) were treated by operation. The total number of children given dental inspection was 2,038,988. Of this number, 768,146, or 56 per cent of those found in need of treatment, were treated.

TABLE 3.—*Number of secondary schools and number of pupils inspected*

	1923	1924	1925
Number of secondary schools, etc	997	1,000	1,040
Number of pupils inspected	132,000	132,000	150,800

The incidence of defects found in secondary schools is given in Table 4.

TABLE 4.—*Incidence of defects in secondary schools*

Defect	Incidence of defect per 1,000 pupils		
	1923	1924	1925
Malnutrition	4	7	4
Skin disease	7	10	3
Defective vision	71	79	82
Squint	2	2	2
Eye disease	5	5	5
Defective hearing	5	4	4
Ear disease	4	4	4
Nose and throat	26	25	25
Enlarged cervical glands	3	3	3
Defective speech	1	1	----------
Heart disease:			
Organic	2	2	2
Functional	3	3	3
Anemia	12	13	13
Lung disease	2	3	3
Tuberculosis (pulmonary):			
Definite	----------	----------	----------
Suspected	1	1	----------
Nonpulmonary	----------	----------	----------
Disease of the nervous system	2	2	2
Deformities	34	32	30
Other defects and disease	23	25	22

Malnutrition is not so common in these older children. The serious defects are less in this group than in the younger children, with the exception of two conditions. Visual defects show an increase. Deformities show an enormous increase, but it should be explained that a large proportion of these are slight lateral spinal curvatures and flat feet. These conditions were not given special attention on the examination of children in the elementary schools.

The teaching of hygiene is becoming more and more important. The development of sound principles of health is of far more value than the learning of concrete facts.

Special schools for physical and mental defectives do not meet the necessary demand.

Open-air schools are strongly approved. It was noted that the delicate children in open-air schools do not have the outbreaks of "common colds" so prevalent in the ordinary schools. There are about 75,000 children in England and Wales recommended for open-air school attendance. About 12,000 of these children were in open-air schools at some time during the year.

Nursery schools are increasing, 27 now being open. Their value is becoming more apparent each year. The nursery school may have far-reaching influences. The close linking up of the nursery school with infant welfare centers, nursery schools, and the school medical service give the best results. A relatively large number of physical defects can here be corrected.

The cost of medical school inspection and treatment is always of paramount interest. The following table summarizes the expenditures for the years 1921–22 to 1924–25.

TABLE 5.—*Cost of medical school inspection and treatment*

Item	1921–22	1922–23	1923–24	1924–25
Salaries	£966,564	£844,813	£841,199	£887,416
Traveling expenses	56,190	50,428	51,022	52,978
Drugs, materials, apparatus, and provision of spectacles	64,380	50,671	52,738	61,153
Contributions to hospitals, infirmaries, nursing associations, etc	139,704	129,250	132,034	141,268
Provision of premises (clinics, administrative offices, etc.), stationery, printing, postage, and miscellaneous objects	164,768	147,926	143,275	157,532
Total	1,391,606	1,223,088	1,220,268	1,300,347

The cost of school medical service was about 2.5 per cent of the cost of public elementary education. In other words, out of every $100 spent on education, $2.50 went for school medical service. In the United States in 1920 about $1.50 out of every $100 for education went to school health work.

The problem of the preschool child is well recognized. The examination of this group is considered to be the most important part of the routine of work in schools. The chief causes of ailments in this group are faulty nutrition, dental disease, ear trouble, tuberculosis, rheumatism, skin lesions, uncleanliness, nervous conditions, diseased tonsils, and adenoids.

The most interesting part of this annual report is the discussion of the evidence of improvement of the health of children on entering school. The medical school work has been in existence for about 20 years. The school medical service can not affect the preschool child except to gain the interest of the mother in the health of her children. But does the infant welfare service show any results? This is most difficult to measure. The changes in personnel and the alterations in standards developed even with investigators unchanged make measurements difficult. Defect and disease are relative terms and are difficult of comparison in different children.

The grosser forms of defects and diseases have diminished, particularly those conditions due to uncleanliness and vermin. The actual toll of defects rather than their nature show little improvement. Nutrition, dental defects, defects of circulation, heart and lungs, deformities, and rickets are practically unchanged. There is a slight improvement in diseases of the eye and squint and ear defect.

However, the general physique of children on admission to school is slightly better than it was before the war. This is shown in Table 6.

TABLE 6.—*Physique of children aged 5 years*

	1913	1914	1917	1918	1919	1922	1923	1924
Average height in inches:								
Boys	40.7	40.4	41.1	40.9	41.4	41.1	41.5	41.4
Girls	40.2	40.3	40.3	40.4	41.1	41.0	41.1	40.8
Average weight in pounds:								
Boys	38.8	38.4	38.6	38.8	39.2	39.6	39.9	39.7
Girls	37.7	37.6	37.9	37.5	37.8	38.3	38.5	38.3

The fundamental principles for improving the health of the preschool child are (1) good stock, (2) efficient mother, and (3) effective medical service to aid her.

Good stock can not be created. Maternal efficiency can be brought about and medical service can be given by the State.

The feature of medical treatment receives special attention in England and Wales. There is a constant development year by year. The scope of treatment is being widened. Conditions treated are ringworm of the scalp; defective vision, which includes the furnishing of spectacles; adenoids and diseased tonsils; deafness and ear disease; orthopedic treatment; and artificial light treatment. Dental inspection and treatment constitute a very important part of special treatment.

Physical education is not receiving the attention it should as, generally, local educational authorities have not yet fully understood its importance.

School meals received special mention. An investigation was made near London by Doctor Mann. His results show that boys receiving milk, supplementary to an adequate diet, gained considerably more in height and weight than did boys who had an adequate diet but no milk.

The infectious diseases took their annual toll. The big four—whooping cough, measles, diphtheria, and scarlet fever—still occupy the van of the destroyers of children. Pneumonia (all forms) still takes first place.

A total of 94,669 children under 15 years of age died during the year. The percentage of the principal causes were as follows:

Diseases of the respiratory system	24
Prematurity and congenital conditions	23
Certain infectious diseases	17
Diarrhea and digestive diseases	10
Tuberculosis	6
All other causes	20

It is of consequence to note that whooping cough caused 6,039 deaths, or 6.2 per cent of the total deaths under 15 years of age (5,855 under 5 years). Yet we in the United States continue to hold whooping cough as of minor importance.

Measles and whooping cough are not of serious concern as causes of death in children over 5 years of age; but diphtheria, tuberculosis, and pneumonia, diseases of the digestive system, and accidents remain high.

The report ends with a summary of a study of physical fitness of adults and raises the question whether the tests can be applied to school children.

The annual report, on the whole, is most interesting, because it summarizes the health work done with the school children of a population of 35,000,000, a report impossible to duplicate in this country.

MUNICIPAL HEALTH DEPARTMENT PRACTICE IN 1923

Report Based on a Survey of 100 Cities of 70,000 or More Population [1]

In 1921 the United States Public Health Service cooperated with the committee on municipal health practice of the American Public Health Association in making a survey of the health department practice in 83 large cities.[2] In September, 1923, the office of administrative health practice in the Public Health Service was established for the purpose of cooperating with the committee on administrative practice of the American Public Health Association in a resurvey of the large cities. This survey was made during 1924, and the report is just off the press. The data that form the basis of the report represent, in most instances, conditions of the calendar year 1923. The information was obtained by means of field surveys, conducted by approximately 50 medical officers and sanitary engineers of the Public Health Service, selected primarily because of their previous experience in survey investigations.

The objectives of the survey included the collection of information in regard to public health practice, together with a critical analysis of the data and an attempt to devise means of bringing objective standards of practice to the attention of individual health officers.

The report constitutes a study of the health service provided in a group of 100 of the largest cities in the United States having a population of 70,000 or more each according to the census of 1920, and an aggregate estimated population at mid year 1923 of 32,155,096. It is divided into two sections. Section 1 contains the analysis of all the data collected concerning the principal health activities studied and the opinions and conclusions of the authors themselves. Section 2 presents a summary of the data secured on the health department organizations and services of the individual cities.

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[1] Municipal health department practice for the year 1923, based upon surveys of the 100 largest cities in the United States. Public Health Bulletin No. 164. XVIII+782 pp.; 16 figs. Government Printing Office, Washington, D. C. Price, $1.25 per copy.

[2] Public Health Bulletin No. 136, July, 1923.

The essential health activities included in the report are as follows: I. Public health administration: A. Organization and personnel; B. Expenditures. II. Educational problems: A. Public health training; B. Popular health education. III. Vital statistics. IV. Control of communicable diseases. V. Hospitals and dispensaries. VI. Tuberculosis prevention and control: A. Analysis of provisions employed for the prevention and control of tuberculosis; B. General discussion of some of the essential problems concerned in the control of tuberculosis. VII. Venereal disease control. VIII. Infant hygiene. IX. School health supervision: A. Analysis and discussion of data; B. Proposed plan of organization; C. Health of children in industry. X. Mental hygiene. XI. Industrial hygiene. XII. Municipal public health nursing. XIII. Public health laboratories. XIV. Milk control. XV. Food and drug control. XVI. Water supplies. XVII. Sewage and excreta disposal. XVIII. General sanitation.

The report on each of the above-mentioned activities is presented by persons especially qualified by experience and training to deal with the particular subject, to express critical opinions, and to present reliable conclusions. In addition, each author presents a plan which, in his opinion, represents the best practice at the present time as shown by his interpretation of the present practice in the entire group of cities studied.

The report presents an enormous mass of valuable data and undoubtedly represents the most comprehensive study of the kind that has ever been made.

It may be purchased through the Superintendent of Documents, Government Printing Office, at $1.25 per copy.

PUBLIC HEALTH ENGINEERING ABSTRACTS

Responsibility of Municipalities, Water Companies, and Individuals for Water-Borne Illness. Isaac D. Rawlings and Harry F. Ferguson. *Journal of the American Water Works Association*, vol. 16, No. 4, October, 1926, pp. 415–426. (Abstract by E. A. Reinke.)

This article describes four water-borne epidemics in Illinois in 1925. Greenville, which obtains water from tubular wells, received contaminated water due to a clogged sewer backing up and flowing through a gravity tile water line between a receiving basin and a reservoir. "No analyses were necessary to prove the pollution of the water in the collecting reservoir. The nose was sufficient." Sterling and Rock Falls, adjoining cities with the same supply, had 12 cases of water-borne typhoid fever, and at least 2 deaths, all from one factory, and due to cross connection with the sewage-polluted Rock River. Lockport had 15 cases and at least 3 deaths.

There is some uncertainty as to whether this epidemic was caused by the public water supply or a factory supply. Both supplies are from creviced limestone, and chlorination had been repeatedly recommended by the State department of public health because of the proximity of pollution such as sewers, privies, cesspools, and the sewage-polluted Chicago Drainage Canal. In November, 1925, at least one person in four at Charleston, with a population of 8,000, was affected by an explosive epidemic of diarrhea. The water works were badly mismanaged and poorly operated, the purified surface supply having been so turbid and dirty at times that water meters would not operate properly. The city has had one or more cases of typhoid fever practically every month for several years. Epidemiological data combined with other data relative to the water works showed conclusively that the water supply was responsible for the majority of the illness.

If the advice of the State department of public health had been followed, the four epidemics mentioned would not have occurred, as in all cases the responsible authorities had been notified and warned of the existing conditions. The attorney general of Illinois, in response to the department's inquiry, gave a legal opinion which is summarized as concluding "that cities, water companies, and individuals supplying water for general use are liable for injuries to health resulting from contamination of such waters if the owners or operators of such water supplies have not exercised reasonable care in discovering and preventing possible contamination of the supplies or have not given due warning to the consumers that the supplies are subject to dangerous contamination. Further, that a warning by the State department of public health to a city, water company, or individual distributing a water supply, which supply causes injuries to health, would not be conclusive of the liability of such city, company, or individual, but it would be a fact strongly tending to show that the owner of the supply knew of the dangerous conditions and would, therefore, practically establish the negligence of the city, company, or individual in failing to remove or prevent the contamination of the supply or to warn the public of the dangerous condition."

Securing Improved Technical Supervision of Water Purification Processes. H. E. Miller, director of bureau of sanitary engineering and inspection, State board of health, Raleigh, N. C. *Journal American Water Works Association*, vol. 16, No. 3, September, 1926, pp. 355–372. (Abstract by Frank Raab.)

This paper does not deal with improvements in the construction of purification plants but merely with improved supervision of purification processes. North Carolina, being essentially a surface water supply State, holds third place with regard to the number of small purification plants operated within its boundaries; Pennsylvania is first, and Ohio second.

A survey made of all the filter plants showed that 36 out of 50 would have either to be replaced or altered to a point where it practically amounted to the building of a new plant. To-day North Carolina has 78 filtered water supplies. Only one plant has technical supervision and complete laboratory control. In nearly all the other cases visual observation and rule of thumb procedure, constitute the only supervision. But despite this fact there was only one water-borne typhoid epidemic charged to the history of the State.

The supervision of purification plants is graded as follows: Filter plants serving cities of over 25,000 population should be provided with a trained operator and complete laboratory control; filter plants serving cities with a population from 25,000 to 10,000 should be provided with a trained operator; filter plants serving cities of less than 10,000 population are not considered economically within reach of a trained operator.

At Charlotte the technical supervision saved $5,000 in the cost of chemical supplies during the first year. Methodical and systematic training for filter plant was at once begun. The training was given by degrees and by various methods—some even by correspondence. Finally chemical and bacteriological training was also provided. Now the University of North Carolina offers a complete course in purification plant supervision. The men who were able to acquire an understanding of bacteriology were utilized to make bacterial counts of milk and to inspect dairies.

The article contains tables which show the source and the manner of treatment of the water supplies of a number of cities as well as the population and other data.

Experience in New York State on Resolution to Discontinue Cross Connections. C. A. Holmquist. *Journal American Water Works Association*, vol. 16, No. 3, September, 1926, pp. 330–335. (Abstract by Frank Raab.)

The State of New York has always looked with deep concern upon cross connections between potable public supplies and polluted auxiliary supplies. In 1906, 700,000 people were served with filtered or treated water. To-day the number has risen to 8,000,000. During this same period the typhoid death rate has dropped from 23.6 to 3.3 per 100,000 population. In 1918 two serious typhoid epidemics were attributed to cross connections. Now 12 municipalities in New York State, including New York City, prohibit cross connections between public supplies and private supplies. A study revealed that at least 38 recorded typhoid outbreaks could be traced to cross connections between public and polluted private supplies. Nine of these outbreaks were in the State of New York and two of them totaled 257 cases of typhoid.

A careful investigation showed further that there is neither a single nor double valve, nor any other type of valve, on the market that

will prevent all flow through cross connections. A State law prohibits all cross connections except the type that is specified. But after July 1, 1928, the latter type, too, is prohibited.

Review of Sugar Factory Wastes in Czechoslovakia. Anon. (Typed report, 8 p.) From the Ministry of Health, Czechoslovakia. (Abstract by J. K. Hoskins.)

Sugar factory wastes may be divided into four types according to origin and chemical contents as follows: (1) Water from beet sluices and washers; (2) condensation water; (3) waters from "laver," where carbon dioxide is being washed; (4) water from diffusion and beet slice presses.

Wastes of (1) contain considerable amounts of earth, beet roots, and some beet juice. Coarse material is screened out, sand and grit are settled in tanks, and the supernatant liquor is treated with lime and sometimes allowed to ferment. Water (2) is not objectionable except for high temperatures and may be cooled before discharge into streams or may be reused. Wastes (3) contain alkaline salts, such as sulphates, as well as dissolved CO_2. Diffusion waters (4) contain dissolved organic matters and beet "crumble." They are sometimes mixed with (1) and treated in tanks with lime and the supernatant liquor is discharged without further purification, which method does not remove the dissolved organic matter or lessen the danger to aquatic life in the receiving stream. Biological purification either in well drained soil or in filters is advisable, but difficult because of high costs and low winter temperatures.

Methods that have proved unsuccessful are enumerated, such as (*a*) treatment with iron sulphate, water glass, and milk of lime and later saturation of the liquor with gas such as CO_2 prior to secondary sedimentation and filtration; (*b*) use of iron chloride and milk of lime; (*c*) dosing with milk of lime followed by broad irrigation. As a result, only mechanical sedimentation is at present used, with special attention given to sludge removal.

Studies of the beet constituents detrimental to fish life made by Prof. E. R. Kobert indicate that the acid and neutral saponin in dilutions of 1 to 160,000 affect fish, and on long contact may be fatal, Prof. Ferd Schulz found that 5mg. of acid saponin killed fish, and that beet wastes (4) caused poisoning in concentrations of 5 to 10 per cent.

The quantity of diffusion waters averages 130 per cent of the weight of beets handled, and of waters from the slice-presses 30 per cent. Less polluting wastes (1), (2), and (3) average 800 per cent of the beet weight.

The Examination of Spoiled Canned Foods. E. J. Cameron and J. R. Esty. *Journal of Infectious Diseases*, vol. 39, No. 2, August, 1926, pp. 89–105. (Abstract by C. T. Butterfield.)

An extensive and thorough study of the bacteriology of spoiled canned foods was made, considering both the "swells" and "flat

sours" types of spoilage. When spoilage is due to under-sterilization, "swells" result from anaerobic fermentation, and "flat sours" are due to the activity of facultative anaerobic types.

In their study the authors have included: (1) General characteristics of the major groups of bacteria found; (2) nomenclature of organisms; (3) distribution in nature in United States; (4) growth of these bacteria in foods and their products.

They found that, apparently, sound canned foods are not universally sterile but contain aerobic spore formers and that such organisms are not a cause of unsoundness.

Two large thermophilic groups were defined as causing "flat sours." Group 80, a facultative thermophilic group of 51 cultures, isolated in pure culture from various canned foods, produced "flat sours" when similar canned foods were inoculated. Group 100, an obligative thermophilic group of 42 cultures, reacted in the same manner.

Investigation of Food Poisoning Outbreak in Peoria. Thomas J. Brophy, quarantine officer, Illinois Department of Public Health. *Illinois Health News*, vol. 13, No. 11, November 1926, pp. 386–393. (Abstract by Isador W. Mendelsohn.)

An account is given of an outbreak of food poisoning involving 96 cases out of 161 people attending a picnic near Peoria, Ill., on August 31, 1926. The cause of the infection is attributed to veal loaf.

MILK-BORNE TYPHOID OUTBREAK AT WESTFIELD, N. J.—A CORRECTION

In PUBLIC HEALTH REPORTS for January 7, 1927, page 11, appeared an abstract of a report by W. T. Eakins, assistant epidemiologist of the New Jersey State Department of Health, on a milk-borne outbreak of typhoid fever at Westfield, N. J. In the abstract the statement was made that "An insanitary privy was suspected to be the probable source of infection." Mr. Eakins states that this conclusion is not in accord with the facts nor justified from his report, the evidence clearly indicating that the milk was infected by a dairy worker who handled the milk while affected with an unrecognized case of typhoid fever. The insanitary privy was mentioned in the report merely as a feature of the dairy premises.

DEATH RATES IN A GROUP OF INSURED PERSONS

Rates for Principal Causes of Death for November, 1926

The accompanying table is taken from the Statistical Bulletin for December, 1926, published by the Metropolitan Life Insurance Co., and presents the mortality experience of the industrial insurance

department of the company for November, 1926, as compared with October, 1926, and with November and year, 1925. The rates are based on the records of approximately 17,000,000 insured persons in the industrial populations of the United States and Canada.

The death rate for this group for November (8.4 per 1,000 persons exposed) shows a considerable seasonal increase over the rate for October (7.9). It is also slightly higher than the rate for the month of November of last year (8.2), this increase being caused in most part by higher mortality from tuberculosis, cancer, and the "degenerative diseases."

The health conditions in this group of persons with respect to the epidemiological diseases of childhood, with the exception of measles, are good. The measles outbreak of 1926 has apparently run its course. The diphtheria mortality in November was slightly lower than in the corresponding month of last year.

It is stated that diabetes has recorded a higher death rate in 7 of the first 11 months of 1926 than in the same months of last year, and it is predicted that this disease will probably register a higher death rate for the year 1926 than for either 1925 or 1924. It is noted that the current rate for diabetes differs little from the rate prevailing 10 years ago, and is considerably higher than the rate of 15 years ago.

The suicide rate continues above average, while the homicide rate is lower than that for last year.

Death rates (annual basis) for principal causes per 100,000 lives exposed, October and November, 1926, and November and year, 1925

[Industrial department, Metropolitan Life Insurance Co.]

Cause of death	Rate per 100,000 lives exposed [1]			
	November, 1926	October, 1926	November, 1925	Year 1925
Total, all causes	837.5	785.8	819.1	907.5
Typhoid fever	6.1	6.2	5.7	4.6
Measles	1.2	1.3	1.8	3.3
Scarlet fever	3.2	2.0	2.0	3.5
Whooping cough	6.0	6.1	3.9	7.7
Diptheria	12.7	10.5	14.1	10.6
Influenza	13.3	6.9	14.1	22.0
Tuberculosis (all forms)	84.6	78.1	80.1	98.1
Tuberculosis of respiratory system	75.2	68.9	71.4	85.9
Cancer	71.2	69.7	67.6	70.5
Diabetes mellitus	15.8	13.9	12.0	15.2
Cerebral hemorrhage	49.8	46.4	48.1	53.6
Organic diseases of heart	123.6	106.7	121.9	126.6
Pneumonia (all forms)	70.6	48.7	78.7	86.5
Other respiratory diseases	11.6	11.0	11.9	13.2
Diarrhea and enteritis	27.3	49.3	30.2	36.7
Bright's disease (chronic nephritis)	69.4	62.0	63.5	69.8
Puerperal state	11.0	11.8	15.4	16.5
Suicides	7.9	7.9	6.7	6.9
Homicides	7.2	6.3	7.3	7.2
Other external causes (excluding suicides and homicides)	61.7	58.0	58.8	64.3
Traumatism by automobiles	19.5	19.5	17.4	16.6
All other causes	183.4	183.0	175.3	190.7

[1] All figures include infants insured under 1 year of age.

MORTALITY SUMMARY FOR 78 LARGE CITIES, 1926

Number of deaths, death rates, and infant mortality in 78 large cities of the United States for 1926 [1] and comparison with 1925

[From the Weekly Health Index, Bureau of the Census, Department of Commerce]

City [2]	Total deaths [3]	Death rate [4]	Deaths under 1 year [3]	Provisional infant mortality rate 1926 [4, 5]	Infant mortality rate 1925	Mortality data for calendar year, 1925 [6]		
						Total deaths	Death rate	Deaths under 1 year
Total (68 cities)	391,614	13.2	45,766	[7] 71	[7] 71	366,755	12.8	45,844
Akron [8]	2,061		361	73	64	1,901		310
Albany	2,036	16.8	158	62	76	1,845	15.7	190
Atlanta [8, 9]	3,981		544			3,919		364
White	1,950		262			1,979		278
Colored	2,031		282			1,940		286
Baltimore	12,440	15.1	1,365	80	82	11,648	14.6	1,394
White	9,395	13.4	944	69	72	8,718	12.8	994
Colored	3,045	25.2	421	124	122	2,930	25.0	400
Birmingham [9]	3,729	17.4	513			3,504	17.0	506
White	1,748	13.4	229			1,583	12.7	236
Colored	1,981	23.5	284			1,921	23.7	270
Boston	11,939	14.9	1,584	84	85	11,576	14.8	1,585
Bridgeport [8]	1,717		229	80	54	1,541		164
Buffalo	7,862	14.2	1,034	82	86	7,434	13.8	1,076
Cambridge	1,560	12.1	192	64	61	1,428	11.9	178
Camden	1,803	13.5	262	85	87	1,775	13.8	271
Canton	1,188	10.6	212	95	76	1,109	10.5	180
Chicago	36,299	11.7	4,096	67	75	34,318	11.5	4,460
Cincinnati	7,237	17.3	769	90	77	6,526	16.0	647
Cleveland	10,786	11.1	1,384	69	66	9,709	10.4	1,324
Columbus	4,057	14.0	423	74	80	3,894	13.9	446
Dallas [9]	2,767	13.4	432			2,657	13.7	470
White	2,129	11.9	356			2,033	12.1	391
Colored	638	23.2	76			624	23.9	79
Dayton	2,172	12.1	266	83	57	1,962	11.3	181
Denver [9]	4,038	13.9	395			4,136	14.7	464
Des Moines	1,763	11.9	144	45	60	1,518	10.7	187
Detroit	16,428	12.5	2,910	87	80	13,677	11.0	2,564
Duluth	1,187	10.3	126	51	66	1,114	10.0	149
El Paso [9]	1,726	15.6	367			1,788	17.0	350
Erie [8]	1,556		214	70	65	1,295		173
Fall River	1,753	13.2	282	94	91	1,590	12.3	302
Flint	1,297	9.4	267	82	74	1,007	7.7	229
Fort Worth [9]	1,587	9.8	215			1,544	10.0	196
White	1,291	9.1	179			1,258	9.3	174
Colored	296	15.3	36			286	15.1	22
Grand Rapids	1,800	11.4	240	66	69	1,767	11.8	249
Houston [8, 9]	2,883		322			2,607		351
White	1,931		218			1,699		242
Colored	952		104			908		109
Indianapolis	5,250	14.1	516	76	70	4,951	13.8	479
White	4,417	13.5	411	70	63	4,152	13.1	376
Colored	833	18.6	105	121	113	799	18.9	103
Jersey City	3,879	12.0	483	68	68	3,675	11.7	471
Kansas City, Kans.	1,607	13.5	182	67	88	1,654	14.3	235
White	1,185	12.1	122	51	74	1,231	12.7	173
Colored	422	20.3	60	172	181	423	21.8	62
Kansas City, Mo. [8]	5,233	13.7	595			5,087	13.9	586
Los Angeles [8]	12,342		1,110	60	67	11,475		1,246
Louisville	4,718	14.9	526	85	81	4,307	14.3	494
White	3,565	13.3	411	75	75	3,288	12.8	400
Colored	1,153	24.1	115	152	126	1,019	22.1	94
Lowell	1,586	14.1	219	80	84	1,553	14.1	228

[1] For 53 weeks ended Jan. 1, 1927.

[2] For the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta 31, Baltimore 15, Birmingham 39, Dallas 15, Fort Worth 14, Houston 25, Indianapolis 11, Kansas City, Kans., 14, Louisville 17, Memphis 38, Nashville 30, New Orleans 26, Norfolk 38, Richmond 32, and Washington, D. C., 25.

[3] Based upon telegraphic reports received each week from city health officers.

[4] Allowance has been made for the 6 extra days, which must be deducted from the 53 weeks to give a period of 365 days.

[5] Infant mortality rate is based upon deaths under 1 year as returned each week and estimated births, 1926.

[6] Based upon deaths which occurred within the calendar year.

[7] Infant mortality rate for the cities in the birth registration area, appearing in the summary.

[8] Mortality rates are omitted, pending the establishment of more satisfactory estimates of population.

[9] Cities with no infant mortality rate are not in the registration area for births.

Number of deaths, death rates, and infant mortality in 78 large cities of the United States for 1926 and comparison with 1925—Continued

City	Total deaths	Death rate	Deaths under 1 year	Provisional infant mortality rate 1926	Infant mortality rate 1925	Mortality data for calendar year, 1926		
						Total deaths	Death rate	Deaths under 1 year
Lynn	1,202	11.4	123	61	78	1,169	11.3	154
Memphis [1]	3,576	19.9	405			3,374	19.3	448
White	1,759	15.2	189			1,559	14.0	189
Colored	1,817	28.4	216			1,815	28.7	259
Milwaukee	5,715	10.9	819	72	82	5,549	10.9	901
Minneapolis	5,060	11.5	509	54	61	4,928	11.6	571
Nashville [2]	2,752	19.8	351			2,349	17.3	298
White	1,606	16.1	226			1,386	14.3	186
Colored	1,146	28.9	125			963	24.8	112
New Bedford	1,532	12.6	290	95	80	1,395	11.7	241
New Haven	2,249	12.2	297	79	66	2,171	12.1	252
New Orleans [1]	8,080	19.0	828			7,944	19.2	987
White	4,729	15.0	408			4,549	14.8	522
Colored	3,351	30.2	420			3,395	31.6	465
New York	77,438	12.9	8,648	67	65	71,835	12.2	8,308
Bronx Borough	9,285	10.1	783	47	57	8,295	9.5	897
Brooklyn Borough	26,192	11.5	3,284	64	60	24,824	11.3	3,053
Manhattan Borough	32,704	17.1	3,615	80	71	29,819	15.3	3,352
Queens Borough	6,934	8.9	765	62	72	7,030	9.8	825
Richmond Borough	2,323	16.0	201	71	61	1,867	13.5	181
Newark, N. J	5,501	11.8	745	70	68	5,308	11.7	734
Norfolk	1,870	10.6	223	85	97	1,771	10.5	250
White	844	7.5	70	43	59	831	7.7	95
Colored	1,026	16.0	153	153	158	940	15.4	155
Oakland	2,871	10.8	286	63	53	2,586	10.2	237
Oklahoma City [1, 2]	1,291		141			1,176		152
Omaha	2,844	13.0	292	61	67	2,813	13.3	331
Paterson	1,878	12.9	188	63	63	1,711	12.0	195
Philadelphia	28,195	13.8	3,023	76	77	26,045	13.2	3,007
Pittsburgh	9,110	14.1	1,235	81	82	9,383	14.8	1,280
Portland, Oreg. [2]	3,436		185	37	46	3,332		239
Providence	3,615	12.9	425	68	64	3,309	12.4	399
Richmond	3,094	16.1	412	103	91	2,740	14.7	379
White	1,749	12.8	184	70	67	1,572	12.0	181
Colored	1,345	24.1	228	163	132	1,168	21.4	198
Rochester	4,181	12.8	410	65	64	3,839	12.1	424
St. Louis [1]	11,733	13.9	1,060			11,341	13.8	1,041
St. Paul	2,970	11.8	190	33	58	3,120	12.7	344
Salt Lake City	1,749	12.9	218	63	46	1,532	11.7	156
San Antonio [2]	3,052	14.6	599			3,029	15.3	562
San Diego	1,909	17.1	112	45	55	1,770	16.7	135
San Francisco	7,854	13.6	373	44	56	7,397	13.3	479
Schenectady	1,100	11.6	122	69	68	1,057	11.4	124
Seattle [2]	3,606		219	43	45	3,372		243
Somerville	1,103	10.9	109	74	77	1,104	11.1	142
Spokane	1,545	13.9	135	64	55	1,386	12.7	123
Springfield, Mass	1,835	12.5	207	60	68	1,782	12.5	229
Syracuse	2,547	13.5	281	68	68	2,292	12.6	280
Tacoma	1,281	11.9	113	50	44	1,243	12.0	97
Toledo	3,807	12.7	444	81	81	3,494	12.2	438
Trenton	2,052	15.1	232	76	80	1,873	14.2	245
Utica	1,714	16.4	177	76	75	1,516	14.9	172
Washington, D. C	7,526	14.0	759	83	87	7,015	13.6	796
White	4,684	11.7	409	65	67	4,293	11.0	419
Colored	2,842	20.9	350	121	132	2,722	22.0	377
Waterbury [2]	1,188		179	80	83	1,083		183
Wilmington, Del	1,633	13.0	191	89	87	1,435	11.8	204
Worcester	2,755	14.0	302	68	75	2,547	13.4	327
Yonkers	1,227	10.4	167	72	69	1,144	10.1	159
Youngstown	1,792	10.7	309	82	74	1,706	10.7	304

[1] Mortality rates are omitted, pending establishment of more satisfactory estimates of population.
[2] Cities with no infant mortality rates are not in the registration area for births.

DEATHS DURING WEEK ENDED JANUARY 15, 1927

Summary of information received by telegraph from industrial insurance companies for week ended January 15, 1927, and corresponding week of 1926. (From the Weekly Health Index, January 20, 1927, issued by the Bureau of the Census, Department of Commerce)

	Week ended Jan. 15, 1927	Corresponding week, 1926
Policies in force	66, 596, 510	62, 779, 250
Number of death claims	13, 673	13, 483
Death claims per 1,000 policies in force, annual rate	10. 7	11. 2

Deaths from all causes in certain large cities of the United States during the week ended January 15, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926. (From the Weekly Health Index, January 20, 1927, issued by the Bureau of the Census, Department of Commerce)

City	Week ended Jan. 15, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Jan. 15, 1927 [3]
	Total deaths	Death rate [1]		Week ended Jan. 15, 1927	Corresponding week, 1926	
Total (67 cities)	7,834	13. 8	14. 6	800	848	[2] 67
Akron	33			8	7	86
Albany [4]	35	15. 2	21. 5	3	2	63
Atlanta	75			14	1	
White	32			5	0	
Colored	43	(5)		9	1	
Baltimore [4]	246	15. 7	19. 9	24	25	74
White	182		18. 1	18	21	69
Colored	64	(5)	30. 7	6	4	93
Birmingham	73	17. 7	19. 0	8	9	
White	39		14. 3	3	2	
Colored	34	(5)	26. 4	5	7	
Boston	224	14. 7	16. 6	21	20	89
Bridgeport	44			1	8	19
Buffalo	168	15. 9	14. 9	23	19	97
Cambridge	24	10. 1	12. 8	4	5	71
Camden	29	11. 4	12. 3	3	5	52
Canton	33	15. 2	10. 9	4	2	95
Chicago [4]	732	12. 3	13. 4	82	76	71
Cincinnati	153	19. 4	18. 8	8	15	50
Cleveland	203	10. 8	11. 6	25	31	66
Columbus	94	16. 8	11. 7	14	4	130
Dallas	52	13. 0	17. 5	7	10	
White	42		15. 7	6	7	
Colored	10	(5)	29. 0	1	3	
Dayton	40	11. 6	13. 0	4	1	66
Denver	79	14. 2	19. 8	7	10	
Des Moines	31	10. 8	12. 1	1	2	17
Detroit	310	12. 1	13. 5	62	62	98
Duluth	35	15. 9	9. 2	5	4	108
El Paso	27	12. 3	15. 3	5	4	
Erie	25			0	3	0
Fall River [4]	30	11. 8	18. 3	7	10	124
Flint	21	7. 7	8. 4	3	5	49
Fort Worth	41	13. 0	8. 5	5	7	
White	35		8. 2	5	4	
Colored	6	(5)	11. 0	0	3	
Grand Rapids	39	12. 8	11. 0	5	1	73
Houston	49			4	10	
White	36			2	7	
Colored	13	(5)		2	3	
Indianapolis	98	13. 7	12. 8	6	9	47
White	84		12. 3	4	8	36
Colored	14	(5)	16. 6	2	1	122
Jersey City	77	12. 5	13. 3	14.	7	105
Kansas City, Mo	113	15. 4	15. 0	5	14	
Los Angeles	295			26	14	74
Louisville	61	9. 9	17. 8	5	6	43
White	45		14. 4	3	4	29
Colored	16	(5)	36. 6	2	2	140

(Footnotes at end of table.)

Deaths from all causes in certain large cities of the United States during the week ended January 15, 1927, infant mortality, annual death rate, and comparison with corresponding week of 1926—Continued

City	Week ended Jan. 15, 1927		Annual death rate per 1,000 corresponding week 1926	Deaths under 1 year		Infant mortality rate, week ended Jan. 15, 1927
	Total deaths	Death rate		Week ended Jan. 15, 1927	Corresponding week, 1926	
Lowell	33	15.6	13.6	5	5	96
Lynn	21	10.4	15.5	2	5	53
Memphis	74	21.6	22.7	11	10	
White	44		19.7	10	5	
Colored	30	(5)	28.1	1	5	
Milwaukee	129	12.8	10.0	22	19	103
Minneapolis	86	10.1	14.7	9	22	51
Nashville [4]	50	18.9	17.9	6	2	
New Bedford	36	15.7	10.9	2	1	35
New Haven	43	12.1	11.5	1	3	14
New Orleans	154	18.9	22.5	16	22	
White	89		19.8	8	10	
Colored	65	(5)	30.1	8	12	
New York	1,591	13.9	13.7	145	149	60
Bronx Borough	188	10.6	11.1	15	17	48
Brooklyn Borough	536	12.3	11.6	59	61	61
Manhattan Borough	666	19.1	18.8	54	58	63
Queens Borough	151	9.7	9.3	11	11	47
Richmond Borough	50	17.7	19.3	6	2	112
Newark, N. J.	106	11.9	13.9	15	9	74
Norfolk	43	12.5	10.2	8	3	161
White	25		6.1	5	1	163
Colored	18	(5)	17.4	3	2	159
Oakland	72	14.1	16.2	8	6	94
Oklahoma City	32			4	1	
Omaha	49	11.7	13.8	7	4	78
Paterson	46	16.7	16.8	7	4	124
Philadelphia	573	14.7	16.0	42	66	56
Pittsburgh	236	19.1	15.9	29	21	101
Portland, Oreg.	74			2	4	21
Providence	70	13.0	17.4	12	12	102
Richmond	53	14.4	16.8	4	8	53
White	35		13.6	3	2	61
Colored	18	(5)	24.6	1	6	38
Rochester	50	9.5	14.3	0	7	0
St. Louis	229	14.2	15.2	13	13	
St. Paul	61	12.7	12.6	3	7	27
Salt Lake City [4]	34	13.0	10.6	5	1	76
San Antonio	74	18.3	15.3	7	6	
San Diego	49	22.2	16.1	1	1	21
San Francisco	169	15.3	17.0	6	10	37
Schenectady	17	9.5	15.7	1	1	30
Seattle	57			4	4	42
Somerville	27	13.8	17.7	2	0	72
Spokane	41	19.6	13.9	2	5	50
Springfield, Mass.	36	12.8	13.7	2	5	31
Syracuse	53	14.0	12.7	4	2	81
Tacoma	28	13.6	12.8	3	3	71
Toledo	71	12.2	9.7	7	7	67
Trenton	37	14.1	18.3	1	6	17
Utica	34	17.2	18.7	4	3	91
Washington, D. C.	165	15.9	19.2	13	18	75
White	104		17.1	8	9	68
Colored	61	(5)	25.3	5	9	92
Waterbury	22			1	4	24
Wilmington, Del.	29	12.0	12.2	0	4	0
Worcester	49	13.1	15.9	6	2	72
Yonkers	12	5.3	6.7	2	5	45
Youngstown	27	8.3	10.1	7	6	98

[1] Annual rate per 1,000 population.
[2] Deaths under 1 year per 1,000 births. Cities left blank are not in the registration area for births.
[3] Data for 63 cities.
[4] Deaths for week ended Friday, Jan. 14, 1927.
[5] In the cities for which deaths are shown by color, the colored population in 1920 constituted the following percentages of the total population: Atlanta, 31; Baltimore, 15; Birmingham, 39; Dallas, 15; Fort Worth, 14; Houston, 25; Indianapolis, 11; Louisville, 17; Memphis, 38; New Orleans, 26; Norfolk 38; Richmond, 32; and Washington, D. C., 25.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control diseases without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary and the figures are subject to change when later returns are received by the State health officers

Reports for Week Ended January 22, 1927

ALABAMA

	Cases
Cerebrospinal meningitis	1
Chicken pox	53
Diphtheria	26
Influenza	100
Lethargic encephalitis	1
Malaria	8
Measles	60
Mumps	22
Ophthalmia neonatorum	1
Pellagra	5
Pneumonia	68
Poliomyelitis	1
Scarlet fever	39
Smallpox	27
Tetanus	1
Trachoma	1
Tuberculosis	14
Typhoid fever	5
Typhus fever	1
Whooping cough	28

ARIZONA

Chicken pox	4
Diphtheria	5
Influenza	14
Measles	35
Scarlet fever	9
Trachoma	80
Tuberculosis	17
Whooping cough	3

ARKANSAS

Cerebrospinal meningitis	1
Chicken pox	70
Diphtheria	15
Hookworm disease	2
Influenza	121
Malaria	13
Measles	36
Mumps	32
Ophthalmia neonatorum	3
Pellagra	5

ARKANSAS—continued

	Cases
Scarlet fever	6
Smallpox	7
Tuberculosis	12
Typhoid fever	8
Whooping cough	33

CALIFORNIA

Cerebrospinal meningitis:	
Sacramento	1
Tuolumne County	1
Chicken pox	503
Diphtheria	181
Influenza	39
Jaundice (epidemic)	2
Lethargic encephalitis:	
Berkeley	1
Long Beach	1
Measles	1,687
Mumps	208
Poliomyelitis:	
Kern County	1
Mayfield	1
Scarlet fever	280
Smallpox:	
Sacramento County	32
Scattering	30
Tuberculosis	186
Typhoid fever	14
Whooping cough	91

COLORADO

Chicken pox	18
Diphtheria	7
German measles	2
Measles	51
Mumps	7
Paratyphoid fever	3
Pneumonia	14
Scarlet fever	70
Septic sore throat	2
Smallpox	29
Tuberculosis	21
Typhoid fever	1

CONNECTICUT

	Cases
Cerebrospinal meningitis	1
Chicken pox	122
Conjunctivitis (infectious)	2
Diphtheria	38
German measles	4
Influenza	28
Measles	49
Mumps	28
Pneumonia (broncho)	52
Pneumonia (lobar)	57
Scarlet fever	111
Septic sore throat	2
Tuberculosis (all forms)	29
Typhoid fever	2
Whooping cough	58

DELAWARE

Anthrax	1
Chicken pox	3
Diphtheria	5
Influenza	2
Pneumonia	1
Scarlet fever	37
Tuberculosis	2
Whooping cough	6

FLORIDA

Chicken pox	35
Diphtheria	53
Influenza	5
Malaria	2
Measles	25
Mumps	13
Pellagra	1
Pneumonia	7
Poliomyelitis	1
Scarlet fever	37
Smallpox	34
Tuberculosis	11
Typhoid fever	6
Whooping cough	5

GEORGIA

Cerebrospinal meningitis	2
Chicken pox	48
Dengue	1
Diphtheria	40
Influenza	173
Malaria	9
Measles	72
Mumps	11
Pellagra	2
Pneumonia	46
Scarlet fever	14
Septic sore throat	14
Smallpox	115
Tuberculosis	12
Typhoid fever	12
Whooping cough	35

IDAHO

Chicken pox	24
Diphtheria	6
Measles	69
Mumps	9
Scarlet fever	39
Smallpox	13
Tuberculosis	4
Whooping cough	1

ILLINOIS

	Cases
Cerebrospinal meningitis:	
Cook County	3
Will County	1
Chicken pox	492
Diphtheria	130
Influenza	100
Measles	1,718
Mumps	239
Pneumonia	378
Scarlet fever	397
Smallpox:	
Clay County	20
Scattering	23
Tuberculosis	258
Typhoid fever	14
Whooping cough	198

INDIANA

Chicken pox	132
Diphtheria	54
Influenza	89
Measles	156
Pneumonia	24
Scarlet fever	195
Smallpox	132
Tuberculosis	33
Typhoid fever	2
Whooping cough	54

IOWA

Chicken pox	44
Diphtheria	2
German measles	2
Influenza	1
Measles	405
Mumps	15
Pneumonia	3
Poliomyelitis—West Liberty	1
Scarlet fever	71
Smallpox	11
Tuberculosis	15
Vincent's angina	1
Whooping cough	19

KANSAS

Cerebrospinal meningitis:	
Kansas City	1
St. Francis	1
Chicken pox	202
German measles	4
Influenza	8
Malaria	1
Measles	285
Mumps	20
Pellagra	1
Pneumonia	64
Poliomyelitis—Potwin	1
Scarlet fever	196
Smallpox:	
Nashville	10
Topeka	14
Scattering	27
Tetanus	1
Tuberculosis	22
Typhoid fever	5
Whooping cough	40

LOUISIANA

	Cases
Cerebrospinal meningitis	1
Diphtheria	19
Influenza	28
Malaria	5
Measles	104
Pneumonia	29
Scarlet fever	19
Smallpox	15
Tuberculosis	27
Typhoid fever	7
Whooping cough	6

MAINE

Chicken pox	67
Conjunctivitis	2
Diphtheria	3
German measles	65
Influenza	40
Measles	157
Mumps	15
Pneumonia	18
Scarlet fever	29
Tuberculosis	8
Typhoid fever	1
Vincent's angina	3
Whooping cough	47

MARYLAND [1]

Cerebrospinal meningitis	2
Chicken pox	158
Diphtheria	46
Dysentery	1
German measles	1
Influenza	82
Measles	29
Mumps	22
Pneumonia (broncho)	59
Pneumonia (lobar)	68
Scarlet fever	81
Septic sore throat	4
Streptococcus sore throat	1
Tetanus	1
Tuberculosis	56
Typhoid fever	6
Whooping cough	78

MASSACHUSETTS

Chicken pox	339
Conjunctivitis (suppurative)	7
Diphtheria	99
German measles	17
Influenza	17
Lethargic encephalitis	1
Measles	158
Mumps	237
Ophthalmia neonatorum	21
Pneumonia (lobar)	133
Scarlet fever	495
Septic sore throat	7
Trachoma	1
Tuberculosis (pulmonary)	90
Tuberculosis (other forms)	13
Typhoid fever	10
Whooping cough	132

[1] Week ended Friday.

MICHIGAN

	Cases
Diphtheria	98
Measles	149
Pneumonia	116
Scarlet fever	272
Smallpox	34
Tuberculosis	202
Typhoid fever	3
Whooping cough	90

MINNESOTA

Cerebrospinal meningitis	3
Chicken pox	293
Diphtheria	27
Dysentery	2
Influenza	2
Measles	222
Pneumonia	5
Poliomyelitis	1
Scarlet fever	269
Smallpox	2
Tuberculosis	25
Typhoid fever	5
Whooping cough	32

MISSISSIPPI

Cerebrospinal meningitis	1
Diphtheria	20
Scarlet fever	20
Smallpox	13
Typhoid fever	1

MISSOURI

(Exclusive of Kansas City)

Chicken pox	44
Diphtheria	62
Influenza	18
Measles	199
Mumps	14
Ophthalmia neonatorum	2
Pneumonia	1
Rabies (in animals)	5
Scarlet fever	138
Smallpox	6
Trachoma	1
Typhoid fever	2
Whooping cough	22

MONTANA

Chicken pox	13
Diphtheria	1
Measles	63
Mumps	17
Scarlet fever	107
Septic sore throat	1
Smallpox	3
Tuberculosis	1
Typhoid fever	1
Whooping cough	2

NEBRASKA

Chicken pox	47
Diphtheria	6
German measles	7

NEBRASKA—continued

	Cases
Measles	127
Mumps	46
Pneumonia	3
Scarlet fever	54
Smallpox	18
Typhoid fever	1
Whooping cough	5

NEW JERSEY

Cerebrospinal meningitis	2
Chicken pox	328
Diphtheria	119
Influenza	44
Malaria	1
Measles	67
Pneumonia	175
Scarlet fever	310
Smallpox	2
Typhoid fever	8
Whooping cough	183

NEW MEXICO

Chicken pox	23
Conjunctivitis	3
Diphtheria	6
German measles	3
Influenza	16
Measles	17
Mumps	13
Pneumonia	12
Puerperal septicemia	1
Scarlet fever	28
Tuberculosis	11
Typhoid fever	2
Whooping cough	6

NEW YORK

(Exclusive of New York City)

Chicken pox	463
Diphtheria	107
Dysentery	1
German measles	85
Measles	782
Mumps	236
Pneumonia	277
Poliomyelitis	2
Scarlet fever	330
Septic sore throat	7
Smallpox	13
Typhoid fever	12
Vincent's angina	10
Whooping cough	190

NORTH CAROLINA

Chicken pox	159
Diphtheria	34
German measles	5
Measles	174
Scarlet fever	73
Smallpox	37
Typhoid fever	6
Whooping cough	434

[1] Deaths.

OKLAHOMA

(Exclusive of Oklahoma City and Tulsa)

	Cases
Cerebrospinal meningitis—Tulsa County	2
Chicken pox	35
Diphtheria	38
Influenza	403
Measles	37
Pneumonia	103
Poliomyelitis—Ottawa County	1
Scarlet fever	48
Smallpox	22
Typhoid fever	6
Whooping cough	8

OREGON

Cerebrospinal meningitis	2
Chicken pox	38
Diphtheria	14
Influenza	43
Measles	34
Mumps	5
Pneumonia [1]	12
Scarlet fever	66
Septic sore throat	2
Smallpox	22
Tuberculosis [1]	3
Typhoid fever	11
Whooping cough	13

PENNSYLVANIA

Cerebrospinal meningitis—Somerset County	1
Chicken pox	963
Diphtheria	229
German measles	30
Impetigo contagiosa	19
Measles	812
Mumps	287
Ophthalmia neonatorum—Philadelphia	4
Pneumonia	98
Poliomyelitis—Madison tonwnship [2]	1
Scabies	5
Scarlet fever	561
Tetanus—Philadelphia	4
Tuberculosis	75
Typhoid fever	19
Whooping cough	313

RHODE ISLAND

Chicken pox	4
Diphtheria	12
Measles	2
Mumps	2
Pneumonia	1
Poliomyelitis	1
Scarlet fever	15
Septic sore throat	2
Tuberculosis	5
Whooping cough	9

SOUTH CAROLINA

Chicken pox	82
Dengue	2
Diphtheria	21

[2] County not specified.

SOUTH CAROLINA—continued

	Cases
Hookworm disease	27
Influenza	1,005
Malaria	110
Measles	32
Pellagra	24
Poliomyelitis	2
Scarlet fever	15
Smallpox	10
Tuberculosis	33
Typhoid fever	4
Whooping cough	65

SOUTH DAKOTA

Chicken pox	39
Diphtheria	4
Measles	107
Mumps	1
Pneumonia	14
Scarlet fever	99
Smallpox	4
Tuberculosis	1
Typhoid fever	2
Whooping cough	7

TENNESSEE

Cerebrospinal meningitis:	
Morgan County	1
Nashville	1
Chicken pox	93
Diphtheria	22
Influenza	69
Malaria	6
Measles	100
Mumps	6
Paratyphoid fever	3
Pellagra	2
Pneumonia	47
Poliomyelitis—McMinn County	1
Rabies	1
Scarlet fever	66
Smallpox	9
Tuberculosis	40
Typhoid fever	21
Whooping cough	62

TEXAS

Cerebrospinal meningitis	1
Chicken pox	141
Dengue	3
Diphtheria	73
Dysentery	2
Influenza	59
Leprosy	1
Measles	21
Mumps	18
Pellagra	1
Pneumonia	12
Rabies (human)	2
Scarlet fever	43
Smallpox	43
Trachoma	1
Tuberculosis	51
Typhoid fever	6
Whooping cough	12

UTAH

	Cases
Cerebrospinal meningitis—Salt Lake City	2
Chicken pox	69
Diphtheria	13
Influenza	2
Measles	595
Mumps	28
Pneumonia	3
Scarlet fever	29
Smallpox	5
Whooping cough	4

VERMONT

Chicken pox	16
Measles	84
Mumps	24
Scarlet fever	12
Whooping cough	24

WASHINGTON

Cerebrospinal meningitis	2
Chicken pox	71
Diphtheria	19
German measles	29
Measles	224
Mumps	55
Poliomyelitis	1
Scarlet fever	97
Smallpox	33
Tuberculosis	24
Typhoid fever	8
Whooping cough	9

WEST VIRGINIA

Cerebrospinal meningitis—Monroe County	1
Chicken pox	85
Diphtheria	27
Influenza	52
Measles	77
Scarlet fever	58
Smallpox	10
Tuberculosis	18
Typhoid fever	20
Whooping cough	87

WISCONSIN

Milwaukee:	
Cerebrospinal meningitis	3
Chicken pox	92
Diphtheria	32
German measles	3
Lethargic encephalitis	1
Measles	84
Mumps	37
Pneumonia	21
Scarlet fever	39
Tuberculosis	9
Typhoid fever	1
Whooping cough	48
Scattering:	
Cerebrospinal meningitis	2
Chicken pox	326
Diphtheria	13

WISCONSIN—continued	Cases
Scattering—Continued.	
German measles	20
Influenza	60
Measles	642
Mumps	183
Pneumonia	17
Scarlet fever	150
Tuberculosis	9
Typhoid fever	5
Whooping cough	120

WYOMING	Cases
Cerebrospinal meningitis—Sheridan County	1
Chicken pox	8
Diphtheria	5
German measles	4
Influenza	1
Measles	177
Mumps	1
Scarlet fever	19
Tularemia—Sweetwater County	3
Whooping cough	11

Reports for Week Ended January 15, 1927

DISTRICT OF COLUMBIA	Cases
Chicken pox	70
Diphtheria	20
Influenza	10
Pneumonia	53
Scarlet fever	32
Tuberculosis	18
Whooping cough	20
NORTH DAKOTA	
Cerebrospinal meningitis	2
Chicken pox	13

NORTH DAKOTA—continued	Cases
Diphtheria	4
Measles	130
Mumps	1
Pneumonia	9
Scarlet fever	88
Smallpox	11
Tuberculosis	3
Whooping cough	3

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of monthly State reports is published weekly and covers only those States from which reports are received during the current week:

State	Cerebrospinal meningitis	Diphtheria	Influenza	Malaria	Measles	Pellagra	Poliomyelitis	Scarlet fever	Smallpox	Typhoid fever
November, 1926										
Colorado	----	98	6	----	78	----	2	411	84	45
Pennsylvania	2	924	----	4	2,436	1	8	----	2	220
December, 1926										
District of Columbia	0	106	3	----	5	4	0	70	0	8
Indiana	1	320	176	----	225	----	1	675	553	31
Iowa	2	133	----	----	218	----	0	280	54	5
Louisiana	2	104	56	38	122	12	2	92	11	42
Maine	0	12	21	----	452	----	0	168	0	11
Maryland	2	244	139	----	128	1	1	291	0	65
Minnesota	4	228	2	----	642	----	3	1,131	22	19
New Jersey	4	530	94	----	155	----	3	783	0	31
New York	24	1,295	----	3	3,920	----	22	2,019	69	154
Vermont	----	8	----	----	490	----	0	60	0	3
West Virginia	----	159	185	----	302	----	1	243	32	175
Wisconsin	10	189	156	----	2,249	----	0	498	38	14

November, 1926

	Cases
Anthrax:	
Pennsylvania	2
Chicken pox:	
Colorado	206
Pennsylvania	3,093
German measles:	
Colorado	3
Pennsylvania	39
Hookworm disease:	
Colorado	2
Impetigo contagiosa:	
Colorado	55
Pennsylvania	59
Lethargic encephalitis:	
Pennsylvania	4
Mumps:	
Colorado	15
Pennsylvania	243
Ophthalmia neonatorum:	
Pennsylvania	12
Rabies in man:	
Pennsylvania	1
Scabies:	
Pennsylvania	40
Septic sore throat:	
Colorado	1
Tetanus:	
Pennsylvania	1
Trachoma:	
Colorado	1
Pennsylvania	1
Vincent's angina:	
Colorado	6
Whooping cough:	
Colorado	35
Pennsylvania	1,240

December, 1926

Anthrax:	
New Jersey	2
New York	4
Chicken pox:	
District of Columbia	236
Indiana	690
Iowa	276
Louisiana	37
Maine	311
Maryland	645
Minnesota	1,260
New Jersey	1,069
New York	3,157
Vermont	216
West Virginia	456
Wisconsin	1,391
Dysentery:	
Louisiana	1
Maryland	2
Minnesota	2
New Jersey	3
New York	7
German measles:	
Iowa	1
Maine	8
Maryland	2
New Jersey	85
New York	474
Vermont	6
West Virginia	12
Wisconsin	65
Hookworm disease:	
Louisiana	8
Lead poisoning:	
New Jersey	5
Lethargic encephalitis:	
Louisiana	2
Maryland	2
Minnesota	3
New York	25
Wisconsin	2
Mumps:	
Iowa	40
Louisiana	7
Maine	37
Maryland	83
New York	1,333
Vermont	91
Wisconsin	444
Ophthalmia neonatorum:	
Maryland	1
New Jersey	4
New York	3
Paratyphoid fever:	
New Jersey	2
New York	6
Puerperal fever:	
New York	82
Rabies in animals:	
Maryland	2
Scabies:	
Maryland	1
Septic sore throat:	
Maine	1
Maryland	12
New York	6
Tetanus:	
Maryland	1
New York	8
Trachoma:	
Wisconsin	1
Tularaemia:	
Maryland	1
Minnesota	2
Typhus fever:	
Maryland	1
New York	3
Vincent's angina:	
Maine	14
Maryland	3
New York	58
Whooping cough:	
District of Columbia	35
Indiana	346
Iowa	33
Louisiana	7
Maine	202
Maryland	344
Minnesota	75
New Jersey	731
New York	1,335
Vermont	244
West Virginia	258
Wisconsin	664

Number of Cases of Certain Communicable Diseases Reported for the Month of November, 1926, by State Health Officers

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	45	356	40	19	106	17	226	137	125
Arizona	8	14	55	26	66	0	108	6	10
Arkansas	55	39	15	23	64	3	41	64	145
California	1,092	728	2,824	712	1,079	83	747	64	312
Colorado	206	98	78	15	411	84	85	45	35
Connecticut	426	113	58	26	230	0	108	11	175
Delaware	12	8	1	1	78	0	[1] 11	1	12
Dist. of Columbia	88	149	9	----	45	0	84	9	18
Florida	13	206	18	2	44	35	63	22	25
Georgia	45	367	11	15	86	48	64	89	83
Idaho [2]	----	----	----	----	----	----	----	----	----
Illinois	1,869	581	1,368	239	1,124	25	1,131	202	958
Indiana	473	406	140	1	617	327	183	86	367
Iowa	299	132	82	21	220	27	28	12	25
Kansas	562	134	395	53	404	35	150	35	228
Kentucky [3]	----	----	----	----	----	----	----	----	----
Louisiana	14	180	52	2	87	14	[1] 143	57	13
Maine	375	13	368	9	161	0	28	6	164
Maryland	501	208	89	43	192	0	183	96	208
Massachusetts	1,232	418	161	599	1,191	0	508	44	442
Michigan	1,212	711	325	132	962	90	242	49	493
Minnesota	1,121	430	511	----	1,054	23	169	15	98
Mississippi	409	244	271	222	147	24	302	139	939
Missouri	393	296	175	26	512	6	163	83	258
Montana	162	9	570	17	410	24	33	5	14
Nebraska [3]	----	----	----	----	----	----	----	----	----
Nevada [4]	----	----	----	----	----	----	----	----	----
New Hampshire	----	33	----	----	55	0	----	0	----
New Jersey	753	516	120	----	568	----	447	94	607
New Mexico [2]	----	----	----	----	----	----	----	----	----
New York	2,616	1,178	2,657	911	1,213	76	1,386	206	1,352
North Carolina	316	708	40	----	460	135	----	85	1,074
North Dakota	146	26	423	11	226	32	8	3	23
Ohio	2,376	1,333	134	207	1,387	132	510	159	938
Oklahoma [5]	64	219	51	4	142	173	53	188	101
Oregon	168	71	66	47	304	80	52	18	27
Pennsylvania	3,093	924	2,436	243	----	2	354	220	1,240
Rhode Island	40	50	12	4	90	0	56	8	17
South Carolina	180	706	20	----	98	29	151	142	148
South Dakota	119	10	209	9	275	32	6	9	53
Tennessee	82	457	55	1	339	11	120	267	239
Texas [3]	----	----	----	----	----	----	----	----	----
Utah [3]	----	----	----	----	----	----	----	----	----
Vermont [2]	----	----	----	----	----	----	----	----	----
Virginia	431	651	240	----	501	10	[1] 78	123	962
Washington	595	229	361	125	371	94	148	53	85
West Virginia	311	241	89	----	266	13	77	124	242
Wisconsin	1,503	301	1,837	461	606	0	158	32	910
Wyoming	115	5	92	17	88	6	2	7	55

[1] Pulmonary.
[2] Report not received at time of going to press.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

Case Rates per 1,000 Population (Annual Basis) for the Month of November, 1926

State	Chicken pox	Diphtheria	Measles	Mumps	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever	Whooping cough
Alabama	0.22	1.74	0.20	0.09	0.52	0.08	1.10	0.67	0.61
Arizona	.23	.40	1.59	.75	1.91	0	3.12	.17	.29
Arkansas	.36	.25	.10	.15	.42	.02	.27	.42	.94
California	3.22	2.14	8.32	2.10	3.18	.24	2.20	.19	.92
Colorado	2.42	1.15	.92	.18	4.84	.99	1.00	.53	.41
Connecticut	3.33	.88	.45	.20	1.80	0	.84	.09	1.37
Delaware	.62	.41	.05	.05	4.01	0	[1] .57	.05	.62
District of Columbia	2.10	3.56	.22	----	1.08	0	2.01	.22	.43
Florida	.14	2.25	.20	.02	.48	.38	.69	.24	.27
Georgia	.18	1.45	.04	.06	.34	.19	.25	.35	.33
Idaho [2]	----	----	----	----	----	----	----	----	----
Illinois	3.22	1.00	2.36	.41	1.94	.04	1.95	.35	1.65
Indiana	1.87	1.60	.55	0	2.43	1.29	.72	.34	1.45
Iowa	1.44	.64	.40	.10	1.06	.13	.13	.06	.12
Kansas	3.75	.89	2.64	.35	2.70	.23	1.00	.23	1.52
Kentucky [3]	----	----	----	----	----	----	----	----	----
Louisiana	.09	1.16	.33	.01	.56	.09	[1] .92	.37	.08
Maine	5.81	.20	5.70	.14	2.49	0	.43	.09	2.54
Maryland	3.92	1.63	.70	.34	1.50	0	1.43	.75	2.33
Massachusetts	3.59	1.22	.47	1.74	3.47	0	1.48	.13	1.29
Michigan	3.47	2.04	.93	.38	2.76	.26	.69	.14	1.41
Minnesota	5.25	2.02	2.40	----	4.94	.11	.79	.07	.46
Mississippi	2.78	1.66	1.84	1.51	1.00	.16	2.05	.94	6.38
Missouri	1.37	1.04	.61	.09	1.79	.02	.57	.29	.90
Montana	2.97	.16	10.43	.31	7.51	.44	.60	.09	.26
Nebraska [3]	----	----	----	----	----	----	----	----	----
Nevada [4]	----	----	----	----	----	----	----	----	----
New Hampshire	----	.89	----	----	1.48	0	----	0	----
New Jersey	2.57	1.76	.41	----	1.94	----	1.52	.32	2.07
New Mexico [3]	----	----	----	----	----	----	----	----	----
New York	2.83	1.28	2.88	.99	1.31	.08	1.50	.22	1.46
North Carolina	1.38	3.08	.17	----	2.00	.59	----	.37	4.67
North Dakota	2.56	.46	7.42	.19	3.96	.56	.14	.05	.40
Ohio	4.50	2.52	.25	.39	2.63	.25	.97	.30	1.78
Oklahoma [5]	.38	1.31	.31	.02	.85	1.04	.32	1.13	.60
Oregon	2.38	1.01	.94	.67	4.31	1.14	.74	.26	.38
Pennsylvania	3.99	1.19	3.14	.31	----	0	.46	.28	1.60
Rhode Island	.75	.94	.23	.08	1.70	0	1.06	.15	.32
South Carolina	1.22	4.78	.14	----	.66	.20	1.02	.96	1.00
South Dakota	2.16	.18	3.78	.16	4.98	.58	.11	.16	.96
Tennessee	.41	2.28	.27	0	1.69	.05	.60	1.33	1.29
Texas [3]	----	----	----	----	----	----	----	----	----
Utah [3]	----	----	----	----	----	----	----	----	----
Vermont [3]	----	----	----	----	----	----	----	----	----
Virginia	2.12	3.20	1.18	----	2.46	.05	[1] .38	.60	4.73
Washington	4.82	1.86	2.93	1.01	3.01	.76	1.20	.43	.69
West Virginia	2.33	1.80	.67	----	1.99	.10	.58	.93	1.81
Wisconsin	6.46	1.29	7.89	1.98	2.60	0	.68	.14	3.91
Wyoming	6.17	.27	4.93	.91	4.72	.32	.11	.38	2.95

[1] Pulmonary.
[2] Reports not received at time of going to press.
[3] Reports received weekly.
[4] Reports received annually.
[5] Exclusive of Oklahoma City and Tulsa.

RECIPROCAL NOTIFICATIONS

Notifications regarding communicable diseases sent during the month of December, 1926, to other State health departments by departments of health of certain States

Referred by—	Chicken pox	Diphtheria	Dysentery	Malaria	Scarlet fever	Smallpox	Tuberculosis	Typhoid fever
California	----	----	----	----	----	2	1	----
Connecticut	----	----	----	----	----	----	----	1
Illinois	1	----	----	1	----	2	4	2
Minnesota	----	----	2	----	1	5	90	3
New York	----	1	----	----	4	----	----	1
Rhode Island	----	----	----	----	----	----	1	----

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

Diphtheria.—For the week ended January 8, 1927, 39 States reported 2,262 cases of diphtheria. For the week ended January 9, 1926, the same States reported 1,966 cases of this disease. Ninety-nine cities, situated in all parts of the country and having an aggregate population of more than 30,640,000, reported 1,175 cases of diphtheria for the week ended January 8, 1927. Last year for the corresponding week they reported 992 cases. The estimated expectancy for these cities was 1,177 cases. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Measles.—Thirty-five States reported 8,940 cases of measles for the week ended January 8, 1927, and 10,392 cases of this disease for the week ended January 9, 1926. Ninety-nine cities reported 2,266 cases of measles for the week this year and 6,693 cases last year.

Poliomyelitis.—The health officers of 39 States reported 17 cases of poliomyelitis for the week ended January 8, 1927. The same States reported 28 cases for the week ended January 9, 1926.

Scarlet fever.—Scarlet fever was reported for the week as follows: Thirty-nine States—this year, 5,286 cases; last year, 4,514 cases; 99 cities—this year, 1,883 cases; last year, 1,560 cases; estimated expectancy, 1,218 cases.

Smallpox.—For the week ended January 8, 1927, 39 States reported 786 cases of smallpox. Last year for the corresponding week they reported 609 cases. Ninety-nine cities reported smallpox for the week as follows: 1927, 133 cases; 1926, 191 cases; estimated expectancy, 95 cases. No deaths from smallpox were reported by these cities for the week this year.

Typhoid fever.—Three hundred and twenty-three cases of typhoid fever were reported for the week ended January 8, 1927, by 39 States. For the corresponding week of 1926 the same States reported 322 cases of this disease. Ninety-nine cities reported 48 cases of typhoid fever for the week this year and 74 cases for the corresponding week last year. The estimated expectancy for these cities was 55 cases.

Influenza and pneumonia.—Deaths from influenza and pneumonia were reported for the week by 93 cities, with a population of more than 29,970,000, as follows: 1927, 1,235 deaths; 1926, 1,359 deaths.

City reports for week ended January 8, 1927

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence how many cases of the disease under consideration may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding week of the preceding years. When the reports include several epidemics or when for other reasons the median is unsatisfactory, the epidemic periods are excluded and the estimated expectancy is the mean number of cases reported for the week during nonepidemic years.

If reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1918 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviations from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND									
Maine:									
Portland	75,333	24	2	0	0	0	7	0	0
New Hampshire:									
Concord	22,546	0	0	0	0	0	49	0	0
Manchester	83,097	0	2	1	0	2	1	0	3
Vermont:									
Barre	10,008	8	0	0	0	0	20	0	1
Massachusetts:									
Boston	779,620	116	66	34	4	1	26	54	34
Fall River	128,993	3	5	2	1	1	1	6	6
Springfield	142,065	40	4	10	0	0	0	1	0
Worcester	190,757	52	6	4	0	0	2	18	14
Rhode Island:									
Pawtucket	69,760	12	1	1	0	0	0	0	5
Providence	267,918	0	11	9	0	1	0	0	4
Connecticut:									
Bridgeport	(1)	5	9	5	2	4	3	2	4
Hartford	160,197	5	8	2	0	0	1	1	2
New Haven	178,927	36	4	1	0	0	0	1	8
MIDDLE ATLANTIC									
New York:									
Buffalo	538,016	66	18	8	------	0	3	3	26
New York	5,873,356	356	222	233	62	22	13	220	231
Rochester	316,786	15	12	10	------	0	0	2	6
Syracuse	182,003	49	8	1	------	0	11	5	16
New Jersey:									
Camden	128,642	5	5	20	0	0	0	0	3
Newark	452,513	37	21	10	11	3	3	48	18
Trenton	132,020	------	7	------	------	------	------	------	------
Pennsylvania:									
Philadelphia	1,979,364	178	84	64	------	4	5	44	72
Pittsburgh	631,563	54	23	17	------	7	25	1	39
Reading	112,707	23	5	5	------	0	2	2	3
EAST NORTH CENTRAL									
Ohio:									
Cincinnati	409,333	35	12	11	1	4	1	35	27
Cleveland	936,485	159	36	85	4	2	2	6	29
Columbus	279,836	22	5	4	0	2	0	0	5
Indiana:									
Fort Wayne	97,846	8	4	3	0	0	30	0	2
Indianapolis	358,819	82	13	24	0	1	0	0	15
South Bend	80,091	9	1	1	0	0	29	0	5
Terre Haute	71,071	3	1	1	0	0	2	0	1
Illinois:									
Chicago	2,995,239	124	123	101	28	10	406	33	91
Peoria	81,564	20	2	3	0	0	55	12	6
Springfield	63,923	15	2	0	2	2	73	3	4
Michigan:									
Detroit	1,245,824	156	73	77	5	4	5	55	45
Flint	130,316	16	9	3	0	0	1	1	5
Grand Rapids	153,698	12	5	0	0	0	2	0	5

[1] No estimate made.

City reports for week ended January 8, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST NORTH CENTRAL—continued									
Wisconsin:									
Kenosha	50,891	23	2	0	0	0	22	28	0
Madison	46,385	69	0	0	0	0	5	0	0
Milwaukee	509,192	68	23	20	1	1	72	33	20
Racine	67,707	25	2	2	0	0	2	8	0
Superior	39,671	0	1	2	0	0	2	0	0
WEST NORTH CENTRAL									
Minnesota:									
Duluth	110,502	1	3	1	0	0	16	0	2
Minneapolis	425,435	191	21	28	0	0	4	1	15
St. Paul	246,001	43	18	3	0	2	7	1	9
Iowa:									
Davenport	52,469	3	1	0	0	-------	21	1	-------
Des Moines	141,441	0	4	8	0	-------	2	0	4
Sioux City	76,411	30	2	4	0	-------	6	0	-------
Waterloo	36,771	49	0	0	0	-------	6	1	-------
Missouri:									
Kansas City	367,481	54	11	9	3	0	38	5	15
St. Joseph	78,342	3	4	2	0	2	1	0	1
St. Louis	821,543	44	55	42	2	2	7	11	-------
North Dakota:									
Fargo	26,403	2	0	0	0	0	5	0	0
South Dakota:									
Aberdeen	15,636	14	1	0	0	-------	0	0	-------
Sioux Falls	30,127	9	1	1	0	-------	0	0	-------
Nebraska:									
Lincoln	60,941	14	2	0	0	0	1	0	1
Omaha	211,768	20	5	3	0	0	39	6	6
Kansas:									
Topeka	55,411	30	2	2	0	0	1	0	4
Wichita	88,367	24	4	1	0	1	1	1	4
SOUTH ATLANTIC									
Delaware:									
Wilmington	122,049	4	3	1	0	0	0	0	8
Maryland:									
Baltimore	796,296	129	31	45	25	2	3	11	32
Cumberland	33,741	3	1	0	0	0	0	0	2
Frederick	12,035	0	0	0	0	0	0	0	3
District of Columbia:									
Washington	497,906	49	21	20	2	0	2	0	29
Virginia:									
Lynchburg	30,395	4	1	1	0	0	10	0	4
Norfolk	(1)	-------	3	-------	-------	-------	-------	-------	-------
Richmond	186,403	6	7	17	0	0	54	2	5
Roanoke	58,208	7	2	2	0	0	3	0	1
West Virginia:									
Charleston	49,019	6	1	2	0	0	0	0	2
Wheeling	56,208	8	2	1	0	0	0	0	0
North Carolina:									
Raleigh	30,371	7	0	1	0	0	2	0	4
Wilmington	37,061	6	0	3	0	0	0	3	2
Winston-Salem	69,031	23	0	3	0	2	0	2	4
South Carolina:									
Charleston	73,125	3	1	0	35	1	0	0	1
Columbia	41,225	2	0	0	0	-------	0	0	-------
Greenville	27,311	7	1	0	0	0	0	0	1
Georgia:									
Atlanta	(1)	6	4	22	21	2	33	4	16
Brunswick	16,809	8	0	0	6	0	0	7	1
Savannah	93,134	3	1	0	4	1	0	0	2
Florida:									
Miami	69,754	7	-------	6	1	0	3	1	3
St. Petersburg	26,847	-------	0	-------	-------	0	-------	-------	3
Tampa	94,743	2	1	2	0	1	4	0	4

[1] No estimate made.

City reports for week ended January 8, 1927—Continued

Division, State, and city	Population July 1, 1925, estimated	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
			Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
EAST SOUTH CENTRAL									
Kentucky:									
Covington	58,309	0	1	4	0	0	0	0	2
Louisville	305,935	21	8	2	1	0	0	1	18
Tennessee:									
Memphis	174,533	15	6	4	0	2	0	0	7
Nashville	136,220	3	2	3	0	3	0	1	7
Alabama:									
Birmingham	205,670	25	3	12	15	3	18	0	6
Mobile	65,955	9	1	0	0	1	2	0	0
Montgomery	46,481	27	1	2	0	0	1	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Fort Smith	31,643	1	1	1	0	-------	0	3	1
Little Rock	74,216	0	1	0	0	0	0	0	8
Louisiana:									
New Orleans	414,493	1	14	11	5	6	43	0	17
Shreveport	57,857	10	2	2	0	0	0	10	4
Oklahoma:									
Oklahoma City	(1)	4	2	3	0	0	0	0	6
Texas:									
Dallas	194,450	9	9	27	0	1	1	0	5
Galveston	48,375	0	2	2	0	0	0	0	0
Houston	164,954	0	5	15	1	1	1	1	10
San Antonio	198,069	0	2	3	0	2	0	0	12
MOUNTAIN									
Montana:									
Billings	17,971	1	0	1	0	0	33	0	1
Great Falls	29,883	6	1	0	0	0	10	0	0
Helena	12,037	0	0	0	0	0	0	0	1
Missoula	12,668	3	1	1	1	1	0	14	1
Idaho:									
Boise	23,042	6	0	0	0	0	41	0	0
Colorado:									
Denver	280,911	34	10	9	-------	6	130	0	23
Pueblo	43,787	3	3	0	0	0	0	0	5
New Mexico:									
Albuquerque	21,000	8	1	0	0	0	5	2	3
Arizona:									
Phoenix	38,669	0	0	0	0	0	0	0	4
Utah:									
Salt Lake City	130,948	17	3	3	0	0	368	1	9
Nevada:									
Reno	12,665	1	0	0	0	0	1	0	1
PACIFIC									
Washington:									
Seattle	(1)	56	6	7	0	-------	6	43	-------
Spokane	108,897	13	4	0	0	-------	305	0	-------
Tacoma	104,455	28	3	5	0	0	1	0	7
Oregon:									
Portland	282,383	35	10	9	5	0	3	0	8
California:									
Los Angeles	(1)	84	40	58	17	2	89	13	37
Sacramento	72,260	5	2	5	0	1	65	13	8
San Francisco	557,530	15	20	13	3	0	115	6	9

[1] No estimate made.

City reports for week ended January 8, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
NEW ENGLAND											
Maine:											
Portland	3	2	0	0	0	0	0	0	0	37	----
New Hampshire:											
Concord	1	1	0	0	0	0	0	0	0	0	16
Manchester	2	2	0	0	0	3	0	0	0	0	28
Vermont:											
Barre	1	0	0	0	0	0	0	0	0	0	4
Massachusetts:											
Boston	54	127	0	0	0	9	1	4	1	20	226
Fall River	3	3	0	0	0	1	0	0	0	12	----
Springfield	8	6	0	0	0	3	0	0	0	2	39
Worcester	12	20	0	0	0	2	0	0	0	6	57
Rhode Island:											
Pawtucket	1	1	0	0	0	1	0	0	0	1	22
Providence	8	17	0	0	0	1	0	0	0	8	82
Connecticut:											
Bridgeport	8	17	0	0	0	1	0	0	0	1	37
Hartford	8	10	0	0	0	0	0	0	0	1	26
New Haven	9	7	0	0	0	0	0	0	0	1	41
MIDDLE ATLANTIC											
New York:											
Buffalo	24	16	0	0	0	11	1	1	0	9	254
New York	194	360	0	0	0	[1] 95	12	7	0	51	1,513
Rochester	14	18	0	0	0	3	1	2	1	7	69
Syracuse	13	5	0	0	0	0	0	0	0	5	61
New Jersey:											
Camden	5	4	0	0	0	0	0	0	0	0	32
Newark	23	42	0	0	0	6	0	0	0	33	111
Trenton	4	----	0	----	----	----	0	----	----	----	----
Pennsylvania:											
Philadelphia	78	102	0	0	0	28	5	2	1	33	----
Pittsburgh	38	26	0	0	0	11	1	1	2	9	235
Reading	2	4	0	0	0	1	0	0	0	1	26
EAST NORTH CENTRAL											
Ohio:											
Cincinnati	14	21	1	0	0	7	1	1	0	1	160
Cleveland	38	44	2	1	0	12	2	0	0	14	213
Columbus	11	8	1	0	0	6	0	0	0	7	70
Indiana:											
Fort Wayne	4	8	1	0	0	1	0	1	0	0	24
Indianapolis	10	16	10	39	0	5	0	0	0	26	104
South Bend	4	4	1	0	0	1	0	0	0	0	23
Terre Haute	3	9	0	2	0	0	0	1	0	0	11
Illinois:											
Chicago	133	132	1	0	0	46	5	2	0	58	865
Peoria	6	1	0	0	0	0	0	0	0	1	17
Springfield	2	2	0	0	0	0	0	0	0	1	26
Michigan:											
Detroit	91	100	3	0	0	29	2	2	1	47	357
Flint	8	21	1	2	0	1	0	1	0	1	35
Grand Rapids	11	13	1	4	0	1	1	0	1	5	33
Wisconsin:											
Kenosha	2	12	1	0	0	0	0	0	0	11	9
Madison	3	3	0	0	0	0	0	0	0	2	5
Milwaukee	30	33	2	0	0	7	1	0	0	54	112
Racine	6	6	0	0	0	0	0	0	0	1	----
Superior	2	3	2	0	0	2	0	0	0	0	5

[1] Pulmonary tuberculosis only.

City reports for week ended January 8, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
WEST NORTH CENTRAL											
Minnesota:											
Duluth	9	16	0	0	0	0	0	0	0	2	15
Minneapolis	49	70	12	0	0	3	1	1	1	1	115
St. Paul	28	32	12	4	0	6	1	0	0	10	71
Iowa:											
Davenport	2	3	1	0	----	----	0	0	----	0	----
Des Moines	7	1	2	1	----	1	0	1	----	0	26
Sioux City	2	8	1	6	----	----	0	0	----	0	----
Waterloo	2	0	1	0	----	----	0	0	----	0	----
Missouri:											
Kansas City	14	21	1	6	0	3	0	0	0	3	102
St. Joseph	2	1	0	0	0	1	0	0	0	0	28
St. Louis	37	38	2	3	0	9	2	3	0	16	237
North Dakota:											
Fargo	2	11	1	0	0	0	0	0	0	3	10
South Dakota:											
Aberdeen	1	6	0	0	----	----	0	0	----	0	----
Sioux Falls	2	1	1	0	----	----	0	0	----	0	----
Nebraska:											
Lincoln	3	2	0	0	0	0	0	0	0	0	14
Omaha	5	15	7	0	0	6	0	0	0	1	70
Kansas:											
Topeka	3	6	0	10	0	0	0	0	0	8	13
Wichita	4	9	0	0	0	2	0	0	0	4	----
SOUTH ATLANTIC											
Delaware:											
Wilmington	3	26	0	0	0	2	0	0	0	0	45
Maryland:											
Baltimore	30	22	0	0	0	18	3	0	0	102	267
Cumberland	1	1	0	0	0	0	0	0	0	0	10
Frederick	0	1	0	0	0	0	0	0	0	1	7
District of Columbia:											
Washington	24	28	0	0	0	7	2	0	0	10	165
Virginia:											
Lynchburg	0	4	0	0	0	1	0	0	0	1	8
Norfolk	2	----	0	----	----	----	0	----	----	----	----
Richmond	5	7	0	0	0	6	1	0	0	2	61
Roanoke	1	2	0	1	0	1	0	0	0	1	14
West Virginia:											
Charleston	2	4	0	0	0	4	0	0	0	4	14
Wheeling	2	5	0	0	0	0	0	0	0	5	17
North Carolina:											
Raleigh	1	4	0	0	0	2	0	0	0	13	16
Wilmington	1	0	0	0	0	0	0	0	0	4	17
Winston-Salem	2	3	2	2	0	2	0	3	0	38	17
South Carolina:											
Charleston	0	1	0	0	0	1	1	1	0	0	23
Columbia	0	1	1	0	----	----	0	0	----	1	----
Greenville	0	2	0	0	0	0	0	0	0	2	5
Georgia:											
Atlanta	3	7	1	10	0	6	0	0	1	19	93
Brunswick	0	2	0	1	0	0	0	0	0	0	3
Savannah	1	1	0	1	0	4	1	0	0	0	32
Florida:											
Miami	----	1	----	0	0	3	----	1	0	2	47
St. Petersburg	1	----	0	----	0	0	0	----	0	----	12
Tampa	0	5	0	0	0	1	0	0	0	0	37

City reports for week ended January 8, 1927—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuberculosis, deaths reported	Typhoid fever			Whooping cough, cases reported	Deaths, all causes
	Cases, estimated expectancy	Cases reported	Cases, estimated expectancy	Cases reported	Deaths reported		Cases, estimated expectancy	Cases reported	Deaths reported		
EAST SOUTH CENTRAL											
Kentucky:											
Covington	1	3	0	0	0	0	0	0	0	0	21
Louisville	5	9	1	3	0	3	1	0	0	10	82
Tennessee:											
Memphis	6	23	1	1	0	1	1	3	1	15	62
Nashville	2	7	0	0	0	4	1	1	1	7	59
Alabama:											
Birmingham	4	3	3	3	0	4	1	0	0	2	81
Mobile	0	1	0	1	0	3	0	1	0	0	32
Montgomery	0	0	0	0	0	0	0	0	0	1	22
WEST SOUTH CENTRAL											
Arkansas:											
Fort Smith	1	0	0	0	------	1	0	0	------	10	11
Little Rock	2	2	0	0	0	0	0	0	0	5	------
Louisiana:											
New Orleans	5	5	0	2	0	13	2	6	1	3	153
Shreveport	1	2	1	0	0	6	0	0	1	0	28
Oklahoma:											
Oklahoma City	2	3	1	0	0	2	0	0	0	4	40
Texas:											
Dallas	4	15	0	3	0	6	0	0	0	3	56
Galveston	0	3	0	0	0	1	0	0	0	0	10
Houston	2	6	1	5	0	5	0	0	0	0	81
San Antonio	1	4	0	0	0	8	0	0	0	0	67
MOUNTAIN											
Montana:											
Billings	2	1	0	0	0	1	0	0	0	0	6
Great Falls	1	15	1	0	0	0	0	0	0	0	4
Helena	1	0	0	0	0	0	0	0	0	0	10
Missoula	0	11	0	0	0	1	0	0	0	1	5
Idaho:											
Boise	1	2	1	0	0	0	0	1	0	0	6
Colorado:											
Denver	10	69	3	0	0	7	0	0	0	1	104
Pueblo	2	1	0	0	0	0	0	0	0	0	13
New Mexico:											
Albuquerque	1	5	0	0	0	9	0	0	0	0	24
Arizona:											
Phoenix	0	1	0	0	0	8	0	0	0	0	29
Utah:											
Salt Lake City	4	7	2	0	0	0	0	0	0	1	34
Nevada:											
Reno	1	0	0	0	0	0	0	0	0	0	7
PACIFIC											
Washington:											
Seattle	10	23	3	9	------	------	1	2	------	6	------
Spokane	4	41	3	1	------	------	0	0	------	3	------
Tacoma	3	2	2	13	0	0	0	0	1	2	32
Oregon:											
Portland	7	12	7	3	0	3	1	2	0	0	69
California:											
Los Angeles	21	49	4	0	0	21	2	0	0	6	329
Sacramento	2	2	1	0	0	5	0	0	0	0	38
San Francisco	12	13	1	0	0	17	1	1	2	9	------

City reports for week ended January 8, 1927—Continued

Division, State, and city	Cerebrospinal meningitis		Lethargic encephalitis		Pellagra		Poliomyelitis (infantile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths
NEW ENGLAND									
Massachusetts:									
Worcester	0	0	0	0	0	0	0	1	0
MIDDLE ATLANTIC									
New York:									
Buffalo	0	0	0	1	0	0	0	0	0
New York	7	3	5	6	0	0	1	3	0
New Jersey:									
Newark	0	0	1	0	0	0	0	1	0
Pennsylvania:									
Philadelphia	1	0	0	0	0	0	0	0	0
EAST NORTH CENTRAL									
Ohio:									
Cleveland	0	0	0	1	0	0	0	0	0
Illinois:									
Chicago	4	0	0	0	0	0	0	0	0
Michigan:									
Detroit	1	2	0	0	0	0	0	1	0
Wisconsin:									
Milwaukee	3	0	1	1	0	0	0	0	0
WEST NORTH CENTRAL									
Missouri:									
St. Louis	1	0	0	0	0	0	0	0	0
SOUTH ATLANTIC									
District of Columbia:									
Washington	0	0	0	0	1	1	0	0	0
Georgia:									
Atlanta [1]	0	0	0	0	2	0	0	0	0
Savannah	0	0	0	0	0	1	0	0	0
Florida:									
Tampa	0	0	0	0	1	0	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Mobile	0	0	1	1	0	0	0	0	0
WEST SOUTH CENTRAL									
Arkansas:									
Little Rock	0	0	0	0	1	0	0	0	0
Texas:									
Houston	0	1	0	1	0	0	0	0	0
San Antonio	0	1	0	0	0	0	0	0	0
MOUNTAIN									
Montana:									
Helena	0	1	0	0	0	0	0	0	0
Colorado:									
Pueblo	1	0	0	0	0	0	0	0	0
PACIFIC									
Washington:									
Seattle	2	0	0	0	0	0	0	0	0
Spokane	1	0	0	0	0	0	0	0	0
Tacoma	2	0	0	0	0	0	0	0	0
Oregon:									
Portland	2	0	0	0	0	0	0	0	0
California:									
Los Angeles	1	0	0	0	0	0	0	1	0

[1] Typhus fever: 1 case at Atlanta, Ga.

The following table gives the rates per 100,000 population for 101 cities for the five-week period ended January 8, 1927, compared with those for a like period ended January 9, 1926. The population figures used in computing the rates are approximate estimates as of July 1, 1926 and 1927, respectively, authoritative figures for many of the cities not being available. The 101 cities reporting cases had estimated aggregate populations of approximately 30,440,000 in 1926 and 30,960,000 in 1927. The 95 cities reporting deaths had nearly 29,780,000 estimated population in 1926 and nearly 30,290,000 in 1927. The number of cities included in each group and the estimated aggregate populations are shown in a separate table below.

Summary of weekly reports from cities, December 5, 1926, to January 8, 1927.—Annual rates per 100,000 population, compared with rates for the corresponding period of 1925–26 [1]

DIPHTHERIA CASE RATES

	Week ended—									
	Dec. 12, 1925	Dec. 11, 1926	Dec. 19, 1925	Dec. 18, 1926	Dec. 26, 1925	Dec. 25, 1926	Jan. 2, 1926	Jan. 1, 1927	Jan. 9, 1926	Jan. 8, 1927
101 cities	139	[2] 201	[3] 158	189	122	[4] 163	132	[5] 177	170	[6] 200
New England	103	163	132	161	89	161	141	158	139	158
Middle Atlantic	138	160	147	167	108	139	126	171	182	[7] 184
East North Central	158	223	154	216	150	[8] 184	132	193	151	223
West North Central	239	193	178	129	184	113	160	[5] 167	288	189
South Atlantic	192	239	192	218	94	[9] 216	129	175	177	[9] 232
East South Central	121	[2] 275	89	145	74	150	110	187	52	138
West South Central	176	267	[3] 241	258	128	168	150	224	189	256
Mountain	166	246	176	164	166	137	111	137	182	126
Pacific	191	240	177	253	88	226	127	156	96	230

MEASLES CASE RATES

101 cities	427	[2] 199	[3] 515	190	416	[4] 207	613	[5] 222	1,147	[6] 386
New England	1,953	165	2,082	229	1,579	168	2,406	184	3,087	253
Middle Atlantic	451	23	518	24	382	22	558	22	997	[7] 31
East North Central	293	218	479	242	537	[8] 241	753	260	1,763	416
West North Central	25	129	35	109	70	77	61	[5] 60	151	260
South Atlantic	539	54	570	90	240	[9] 62	470	180	1,278	[9] 214
East South Central	21	[2] 83	79	21	116	31	105	78	52	107
West South Central	4	146	[3] 9	82	9	103	0	13	0	189
Mountain	37	3,214	28	2,349	28	2,777	83	3,541	55	5,241
Pacific	52	617	77	607	36	884	47	701	64	1,521

SCARLET FEVER CASE RATES

101 cities	223	[2] 238	[3] 232	279	203	[4] 253	225	[5] 267	269	[6] 329
New England	187	340	192	388	240	248	304	357	295	490
Middle Atlantic	172	177	189	214	146	212	168	234	210	[7] 288
East North Central	288	236	286	242	234	[8] 254	249	245	334	283
West North Central	476	431	454	413	438	371	509	[5] 387	583	451
South Atlantic	152	175	154	201	157	[9] 172	140	240	156	[9] 243
East South Central	110	[2] 149	116	249	168	244	100	176	119	294
West South Central	141	142	[3] 88	237	97	125	119	151	112	155
Mountain	157	801	277	1,111	213	974	250	892	237	933
Pacific	185	232	243	386	182	305	210	253	241	340

[1] The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1926, and 1927, respectively.
[2] Covington, Ky., not included.
[3] Shreveport, La., not included.
[4] Terre Haute, Ind., and Norfolk, Va., not included.
[5] Topeka, Kans., not included.
[6] Trenton, N. J., and Norfolk, Va., not included.
[7] Trenton, N. J., not included.
[8] Terre Haute, Ind., not included.
[9] Norfolk, Va., not included.

Summary of weekly reports from cities, December 5, 1926, to January 8, 1927.—Annual rates per 100,000 population, compared with rates for the corresponding period of 1925–26—Continued

SMALLPOX CASE RATES

	Week ended—									
	Dec. 12, 1925	Dec. 11, 1926	Dec. 19, 1925	Dec. 18, 1926	Dec. 26, 1925	Dec. 25, 1926	Jan. 2, 1926	Jan. 1, 1927	Jan. 9, 1926	Jan. 8, 1927
101 cities	21	[3] 11	[3] 20	16	18	[4] 14	24	[5] 12	33	[6] 23
New England	0	0	0	0	0	0	0	0	0	0
Middle Atlantic	0	1	1	1	0	0	1	1	0	[7] 0
East North Central	33	7	26	11	25	[8] 16	23	7	48	32
West North Central	18	38	37	46	20	28	18	[8] 19	63	58
South Atlantic	8	19	12	26	10	[9] 30	25	41	43	[9] 29
East South Central	5	[3] 22	11	78	0	36	74	47	47	41
West South Central	9	9	[3] 23	43	9	26	22	22	52	42
Mountain	102	18	37	0	9	18	37	9	36	0
Pacific	124	43	113	40	130	43	152	22	110	60

TYPHOID FEVER CASE RATES

101 cities	20	[3] 13	[5] 16	12	9	[4] 11	10	[3] 12	13	[6] 8
New England	22	2	10	31	10	40	7	24	31	9
Middle Atlantic	25	18	17	8	11	5	7	7	14	[7] 6
East North Central	12	3	13	5	7	[8] 4	6	5	11	5
West North Central	12	4	14	10	4	10	6	[8] 4	2	8
South Atlantic	23	24	17	19	12	[9] 16	12	34	9	[9] 8
East South Central	26	[3] 44	26	21	5	16	32	21	16	25
West South Central	31	13	[3] 28	22	9	17	48	17	21	25
Mountain	18	9	9	9	18	0	9	27	9	9
Pacific	14	16	17	24	8	22	8	16	11	8

INFLUENZA DEATH RATES

95 cities	13	[3] 17	[3] 14	14	12	[4] 15	15	[5] 17	21	[6] 20
New England	10	9	14	7	12	7	12	21	9	16
Middle Atlantic	12	12	8	13	9	14	10	21	18	[7] 18
East North Central	11	14	17	12	8	[8] 10	8	15	12	17
West North Central	6	15	4	15	6	11	15	[8] 6	8	15
South Atlantic	8	34	10	26	17	[9] 34	19	17	15	[9] 18
East South Central	47	[3] 44	53	5	32	36	32	26	83	46
West South Central	44	43	[3] 36	43	48	19	44	14	44	43
Mountain	18	36	0	9	28	27	28	46	46	63
Pacific	4	11	18	7	15	4	40	0	57	10

PNEUMONIA DEATH RATES

95 cities	130	[3] 129	[3] 149	138	136	[4] 137	186	[5] 163	220	[6] 195
New England	132	135	158	149	165	151	213	173	245	181
Middle Atlantic	132	139	148	147	145	166	188	179	229	[7] 207
East North Central	116	103	132	119	101	[8] 111	145	134	177	170
West North Central	84	118	133	120	99	91	127	[8] 117	141	116
South Atlantic	173	154	200	126	205	[9] 152	267	186	291	[9] 237
East South Central	184	[3] 171	215	130	142	109	263	192	331	204
West South Central	208	151	[3] 184	184	174	90	276	151	313	241
Mountain	176	109	120	273	203	164	268	200	128	369
Pacific	76	114	98	124	87	149	138	199	219	210

[3] Covington, Ky., not included.
[3] Shreveport, La., not included.
[4] Terre Haute, Ind., and Norfolk, Va., not included.
[5] Topeka, Kans., not included.
[6] Trenton, N. J., and Norfolk, Va., not included.
[7] Trenton, N. J., not included.
[8] Terre Haute, Ind., not included.
[9] Norfolk, Va., not included.

Number of cities included in summary of weekly reports, and aggregate population of cities in each group, approximated as of July 1, 1926 and 1927, respectively

Group of cities	Number of cities reporting cases	Number of cities reporting deaths	Aggregate population of cities reporting cases		Aggregate population of cities reporting deaths	
			1926	1927	1926	1927
Total	101	95	30,438,500	30,900,600	29,778,400	30,289,800
New England	12	12	2,211,000	2,245,900	2,211,000	2,245,900
Middle Atlantic	10	10	10,457,000	10,567,000	10,457,000	10,567,000
East North Central	16	16	7,644,900	7,804,500	7,644,900	7,804,500
West North Central	12	10	2,585,500	2,626,600	2,470,600	2,510,000
South Atlantic	21	20	2,799,500	2,878,100	2,757,700	2,835,700
East South Central	7	7	1,008,300	1,023,500	1,008,300	1,023,500
West South Central	8	7	1,213,800	1,243,300	1,181,500	1,210,400
Mountain	9	9	572,100	580,600	572,100	580,000
Pacific	6	4	1,946,400	1,991,700	1,475,300	1,512,800

FOREIGN AND INSULAR

THE FAR EAST

Report for week ended December 25, 1926.—The following report for the week ended December 25, 1926, was transmitted by the eastern bureau of the secretariat of the health section of the League of Nations, located at Singapore, to the headquarters at Geneva:

Maritime towns	Plague		Cholera		Smallpox	
	Cases	Deaths	Cases	Deaths	Cases	Deaths
British India:						
Bombay	----	0	----	0	7	5
Madras	----	0	----	0	11	0
Calcutta	----	0	----	62	93	72
Rangoon	----	3	----	1	1	0
Negapatam	----	0	----	1	0	0
Karachi	----	0	----	0	1	1
Straits Settlements:						
Singapore	0	0	3	3	5	0
Dutch East Indies:						
Surabaya	2	2	0	0	0	0
Macassar	1	1	0	0	0	0
Siam: Bangkok	0	0	4	1	1	1
French Indo-China:						
Turane	0	0	13	8	0	0
Haiphong	0	0	----	200	0	0
U. S. S. R.: Vladivostok	0	0	0	0	6	0
Mauritius: Port Louis	6	4	0	0	0	0
Madagascar:						
Tamatave	1	0	0	0	0	0
Majunga	1	0	0	0	0	0

Telegraphic reports from the following maritime towns indicated that no case of plague, cholera, or smallpox was reported during the week:

ASIA

Arabia.—Aden, Jeddah, Kamaran, Perim.

Iraq.—Basrah.

Persia.—Mohammerah, Bender-Abbas, Bushire.

British India.—Chittagong, Cochin, Vizagapatam Tuticorin.

Portuguese India.—Nova Goa.

Federated Malay States.—Port Swettenham

Straits Settlements.—Penang.

Dutch East Indies.—Samarang, Batavia, Sabang, Banjermasin, Palembang, Belawan-Deli, Padang, Cheribon, Pontianak.

Sarawak.—Kuching.

British North Borneo.—Sandakan, Jesselton, Kudat, Tawao.

Portuguese Timor.—Dilly.

French Indo-China.—Saigon and Cholon.

Philippine Islands.—Manila, Iloilo, Jolo, Cebu, Zamboanga.

China.—Amoy, Shanghai (International Settlement).

Hongkong.

Macao.

Formosa.—Keelung.

Korea.—Chemulpo, Fusan.

Manchuria.—Harbin, Antung, Yingkow, Changchun, Mukden.

Kwan-tung.—Port Arthur, Dairen.

AUSTRALASIA AND OCEANIA

Australia.—Adelaide, Melbourne, Sydney, Brisbane, Rockhampton, Townsville, Port Darwin, Broome, Fremantle, Carnarvon, Thursday Island.

New Guinea.—Port Moresby.

New Britain Mandated Territory.—Rabaul and Kokopo.

New Zealand.—Auckland, Wellington, Christchurch, Invercargill, Dunedin.

New Caledonia.—Noumea.

Fiji.—Suva.

Hawaii.—Honolulu.

Society Islands.—Papeete.

AFRICA

Egypt.—Port Said, Suez, Alexandria.

Anglo-Egyptian Sudan.—Port Sudan, Suakin.

Eritrea.—Massaua.

French Somaliland.—Jibuti.

British Somaliland.—Berbera.

Italian Somaliland.—Mogadiscio.

Kenya.—Mombasa.

Zanzibar.—Zanzibar.

Tanganyika.—Dar-es-Salaam.

Seychelles.—Victoria.

Portuguese East Africa.—Mozambique, Beira, Lourenço-Marques.

Union of South Africa.—East London, Port Elizabeth, Cape Town, Durban.

Reports had not been received in time for distribution from:

Dutch East Indies.—Menado, Samarinda, Tarakan, Balikpapan.
Ceylon.—Colombo.
Japan.—Yokohama, Osaka, Nagasaki, Niigata, Hakodate, Shimonoseki, Moji, Kobe, Tsuruga.

Belated information

Week ended December 4—
India.—Negapatam, 3 deaths from cholera.
Japan.—Province of Tayama, 2 smallpox cases; Province of Fukuoko, 2 smallpox cases.
Week ended December 11—
French India.—District of Karikal, smallpox, 3 cases, 3 deaths; district of Pondicherry, 1 smallpox case.
The following information has been received for the 26th to 29th of December, 1926:
Singapore.—Smallpox, 1 case.
Johore Bahru (State of Johore).—Cholera, 3 cases, 1 death.

CANADA

Communicable diseases—Weeks ended January 1 and January 8, 1927.—The Canadian Ministry of Health reports cases of certain communicable diseases in seven Provinces of Canada for the weeks ended January 1 and 8, 1927, as follows:

WEEK ENDED JANUARY 1, 1927

Disease	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	Total
Cerebrospinal fever			1	3				4
Influenza	16							16
Lethargic encephalitis					1			1
Smallpox				28	3	1	6	38
Typhoid fever	3		4	9				16

WEEK ENDED JANUARY 8, 1927

Influenza	20							20
Smallpox				10	1		6	17
Typhoid fever			9	10		1		20

CANARY ISLANDS

Plague—Atarfe—December 20, 1926.—A case of plague was reported, December 20, 1926, in the Canary Islands. The case occurred at Atarfe, a town in the vicinity of Las Palmas, and terminated fatally.

ECUADOR

Plague—Plague-infected rats—Smallpox—Guayaquil—December 1-15, 1926.—During the period December 1 to 15, 1926, six cases of plague with two deaths were reported at Guayaquil, Ecuador. During the same period, 13,076 rats were reported taken and 54 found plague infected.

One case of smallpox was reported at Guayaquil during the period under report.

INDIA

Cholera—Smallpox—Calcutta.—Information received under date of January 14, 1927, shows cholera and smallpox present at Calcutta, India.

PANAMA CANAL

Communicable diseases—September–October, 1926.—Communicable diseases have been reported in the Canal Zone, and at Colon and Panama, during the months of September and October, 1926, as follows:

SEPTEMBER, 1926

Disease	Canal Zone		Colon		Panama		Infected in other localities		Total	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Chicken pox			1						1	
Diphtheria			1		20		1	1	22	1
Dysentery	1		1		3	1	1		6	1
Hookworm			9		35		65		109	
Leprosy							1		1	
Malaria	94		2	1	4	1	18		118	2
Measles	4		2		11		1		18	
Meningitis							1	1	1	
Pneumonia		2		6		27		10		45
Tuberculosis		2		1		16		4		23
Whooping cough			2		3				5	

OCTOBER, 1926

Chicken pox					4				4	
Diphtheria					5				5	
Dysentery	1				4	1			5	1
Hookworm			7		52		47		106	
Malaria	73	1	3		7		24		107	1
Measles	3		8		20				31	
Meningitis	1	1							1	1
Pneumonia		3		5		22		8		38
Relapsing fever			1				1		2	
Tuberculosis		1		4		21		4		30
Typhoid fever							1	1	1	1
Whooping cough					2	1			2	1

PERU

Mortality from communicable diseases—Arequipa—December, 1926.—During the month of December, 1926, mortality from communicable diseases was reported at Arequipa, Peru, as follows: Gastroenteritis, deaths, 7; influenza, 2; tuberculosis, 20. Population, estimated, 43,000.

Mortality from all causes—Prevailing diseases.—During the same period, 73 deaths from all causes were reported at Arequipa. Prevailing diseases reported were: Bronchitis, bronchopneumonia, and pneumonia; tuberculosis, and a few cases of typhoid fever, typhus fever, and smallpox.

Mortality from communicable diseases—Callao—Lima—October, 1926.—Mortality from communicable diseases was reported at Callao and Lima, Peru, for the month of October, 1926, as follows:

Disease	Deaths		Disease	Deaths	
	Callao	Lima		Callao	Lima
Diphtheria	1	2	Puerperal fever		2
Gastroenteritis	5	32	Tuberculosis	31	99
Influenza	1	15	Typhoid fever		4
Malaria	3	4	Whooping cough		2

Population: Callao, estimated, 60,000; Lima, estimated, 240,000.

Plague—November, 1926.—During the month of November, 1926, 24 cases of plague with 4 deaths were reported in Peru, occurring in three departments, viz, *Ica*, *Lambayeque*, and *Lima*. Plague was stated to be present during the same period, with an unreported number of cases, in the department of Cajamarca, and two districts of the department of Lima. In Lima City five cases with one death were reported.

PORTUGUESE WEST AFRICA

Plague—Benguela, Angola—October 16–31, 1926.—During the period October 16 to 31, 1926, eight cases of plague with four deaths were reported at Benguela, Angola, Portuguese West Africa.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

The reports contained in the following tables must not be considered as complete or final as regards either the lists of countries included or the figures for the particular countries for which reports are given.

Reports Received During Week Ended January 28, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
India				Oct. 31–Nov. 13, 1927: Cases, 2,947; deaths, 1,758.
Calcutta	Nov. 28–Dec. 4	40	31	
Rangoon	do	2	2	

PLAGUE

Canary Islands:				
Atarfe	Dec. 20	1	1	Vicinity of Las Palmas.
Ecuador:				
Guayaquil	Dec. 1–15	6	2	Rats taken: 13,076; found infected, 54.
India				Oct. 31–Nov. 13, 1926: Cases, 2,996; deaths, 1,740.
Rangoon	Nov. 28–Dec. 4	1	1	
Java:				
Batavia	do	10	9	
Peru	Nov. 1–30			Cases, 24; deaths, 4.
Departments—				
Cajamarca	do			Present. Cases not reported.
Ica—				
Chincha	do	1		

[1] From medical officers of the Public Health Service, American consuls, and other sources.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received During Week Ended January 28, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Peru—Continued.				
Departments—Continued				
Lambayeque	Nov. 1-30			Present in Lambayeque Province.
Chiclayo	do	3		
Lima	do			Cases, 20; deaths, 4. Present in Cajatambo and Chancay provinces.
Canete Province	do	10	3	
Chancay Province	do	3		
Lima Province	do	7	1	
Portuguese West Africa:				
Angola—				
Benguela	Oct. 16-31	8	4	
Syria:				
Beirut	Dec. 1-10	1		

SMALLPOX

Brazil:				
Rio de Janeiro	Dec. 5-25	60	23	Jan. 1-Dec. 25, 1926: Cases, 4,038; deaths, 2,173.
Canada	Dec. 26-Jan. 1	38		
Do	Jan. 2-8	17		
Alberta	Dec. 26-Jan. 1	6		
Do	do	6		
Calgary	Jan. 2-8	3		
Manitoba	Dec. 26-Jan. 1	3		
Do	Jan. 2-8	1		
Winnipeg	Jan. 2-15	2		
Ontario	Dec. 26-Jan. 1	28		
Do	Jan. 2-8	10		
Ottawa	Jan. 9-15	1		
Toronto	Jan. 2-8	10	1	
Saskatchewan	Dec. 28-Jan. 1	1		
China:				
Manchuria—				
Mukden	Dec. 5-11	1		
France:				
Paris	Dec. 1-10	2	2	
Germany:				
Stuttgart	Nov. 28-Dec. 4	7		
India	Oct. 31-Nov. 13	2,102	462	
Calcutta	Nov. 28-Dec. 4	45	24	
Rangoon	do	1		
Iraq:				
Baghdad	Nov. 7-20	2	1	
Japan:				
Yokohama	Nov. 27-Dec. 3	2		
Mexico:				
Mexico City	Dec. 19-25	1		Including municipalities in Federal District.
Do	Dec. 26-Jan. 8	1		Do.
Peru:				
Arequipa	Dec. 1-31			Present.
Portugal:				
Lisbon	Dec. 19-25	3	1	
Portuguese West Africa:				
Angola				Oct. 1-15, 1926: Present in Congo district.
Straits Settlements:				
Singapore	Oct. 31-Nov. 20	2		
Union of South Africa:				
Natal—				
Durban	Nov. 20			Last case reported.

TYPHUS FEVER

Chile:				
Valparaiso	Dec. 12-18	3		
Palestine:				
Beisan	Dec. 21-27	1		
Haifa	Nov. 30-Dec. 13	3		
Jaffa	Nov. 30-Dec. 20	4		
Nazareth	do	5		
Peru:				
Arequipa	Dec. 1-31			Present.
Union of South Africa:				
Cape Province	Nov. 28-Dec. 4			Outbreaks.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from January 1 to 21, 1927 [1]

CHOLERA

Place	Date	Cases	Deaths	Remarks
China:				
Chungking	Nov. 14-20			Present.
Tsingtao	Nov. 14-Dec. 11			Do.
French Settlements in India	Aug. 29-Oct. 2	93	64	
India	Oct. 10-30			Cases, 4,146; deaths, 2,412.
Calcutta	Oct. 31-Nov. 20	84	69	
Rangoon	Nov. 21-27	1	1	
Indo-China	July 1-31			Cases, 2,204; deaths, 1,350. European, 1.
Saigon	Oct. 31-Nov. 13	2	2	
Province—				
Annam	July, 1926	215	178	July, 1925: Cases, none.
Cambodia	do	571	352	One European, fatal. July, 1925: Cases, 3.
Cochin-China	do	390	317	July, 1925: Cases, 6; deaths, 2.
Kwang-Chow-Wan	do	220		July, 1925: Cases, 22; deaths, 15.
Laos	do	24	21	July, 1925: One case.
Tonkin	do	784	482	July, 1925: Cases, 3; deaths, 1.
Philippine Islands:				
Manila	Oct. 31-Nov. 6	1		
Siam	do			Case, 1.
Do	Apr. 1-Nov. 20			Cases, 7,714; deaths, 5,080.
Bangkok	Oct. 31-Nov. 20	6	1	
Straits Settlements	July 25-Aug. 21		11	

PLAGUE

Algeria:				
Algiers	Reported Nov. 26	1		
Oran	Nov. 21-Dec. 10	32	22	
Tarafaraoui	Nov. 1-Dec. 9	10	9	Near Oran.
Brazil:				
Rio de Janeiro	Nov. 28-Dec. 4	2	2	
Ceylon:				
Colombo	Nov. 14-Dec. 4	2	1	Two plague rodents.
China:				
Nanking	Oct. 31-Nov. 20			Prevalent.
Ecuador:				
Guayaquil	Nov. 1-30	12	3	Rats taken, 24,887; found infected, 77.
Egypt	Jan. 1-Dec. 9			Cases, 149.
Alexandria	Nov. 19-Dec. 2	2		
Kafr el Sheikh	Dec. 3-9	2		
Tanta District	Nov. 19-Dec. 20	3		
Greece	Nov. 1-30	10	1	Athens and Piræus.
Athens	do		3	
Patras	Nov. 28-Dec. 4		1	
Pravi	Nov. 27	1	1	Province of Drama-Kavalla.
India	Oct. 10-30			Cases, 4,989, deaths, 2,920.
Bombay	Nov. 21-27	1	1	
Madras	Oct. 17-23	83	45	
Do	Nov. 1-7	75	32	
Rangoon	Nov. 14-27	6	5	
Indo-China	July 1-31			Cases, 24; deaths, 10.
Province—				
Cambodia	July, 1926	6	6	July, 1925: Cases, 16; deaths, 13.
Cochin-China	do	8	4	July, 1925: No case.
Kwang-Chow-Wan	do	10		July, 1925: Cases, 22; deaths, 15.
Java:				
Batavia	Nov. 7-27	17	17	Province.
Surabaya	Oct. 24-Nov. 6	8	8	
Madagascar:				
Province—				
Analalava	Oct. 16-31	1	1	Bubonic.
Itasy	do	2	2	
Maevatanana	do	10	10	
Moramanga	do	21	15	
Tamatave	do	3	1	
Tananarive	do			Cases, 85; deaths, 79.
Tananarive Town	do	13	13	
Nigeria	Aug. 1-31	187	104	
Portugal:				
Lisbon	Nov. 23-26	3	2	In suburb of Belem.

[1] From medical officers of the Public Health Service, American consuls, and other sources. For reports received from June 26 to Dec. 31, 1926, see Public Health Reports for Dec. 31, 1926. The tables of epidemic diseases are terminated semiannually and new tables begun.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from January 1 to 21, 1927—Continued

PLAGUE—Continued

Place	Date	Cases	Deaths	Remarks
Senegal	July 1-31	178	162	
Diourbel	Nov. 20-30	12	1	
Syria:				
Beirut	Nov. 11-20	1		
Union of South Africa:				
Cape Province—				
De Aar District	Nov. 21-27	1		Native.
Hanover District	Nov. 14-20	1		Native. On farm.
Orange Free State—				
Hoopstad District	Nov. 7-13	1	1	Do.

SMALLPOX

Algeria	Sept. 21-Oct. 20	160		
Arabia:				
Aden	Dec. 12-18	1		Imported.
Belgium	Oct. 1-10	1		
Brazil:				
Bahia	Oct. 30-Nov. 20	3	3	
Para	Oct. 31-Nov. 6		1	
Pernambuco	Oct. 17-Dec. 4	56	2	
Rio de Janeiro	Nov. 14-27	80	41	
Sao Paulo	Aug. 23-Oct. 3	10	8	
British South Africa:				
Northern Rhodesia	Nov. 27-Dec. 3			Cases, 200. In natives.
Canada	Dec. 5-25			Cases, 117.
Alberta	Jan. 2-8	26		
Calgary	Nov. 28-Dec. 25	12		
Manitoba	Dec. 5-25	6		
Winnipeg	Dec. 19-25	1		
Ontario	Dec. 5-18	68		
Kingston	Jan. 1-7	1		
Ottawa	Dec. 12-31	5		
Toronto	Dec. 14-25	14		
Do	Jan. 1-7	5		
Saskatchewan	Dec. 5-25	17		
China:				
Chungking	Nov. 7-27			Present.
Foochow	Nov. 7-13			Do.
Hankow	Nov. 6-30			Do.
Swatow	Nov. 21-27			Do.
Chosen	Aug. 1-31	33	10	
Seoul	Nov. 1-30	2		
Egypt:				
Cairo	June 11-Aug. 26	27	4	
Estonia	Oct. 1-30	2		
France	Sept. 1-30	66		
French Settlements in India	Aug. 29-Sept. 25	40	40	
Gold Coast	Aug. 1-31	41	5	
Great Britain:				
England and Wales	Nov. 14-Dec. 11			Cases, 1,300.
Newcastle-on-Tyne	Dec. 5-11	2		
Sheffield	Nov. 28-Dec. 18	22		
Greece	Nov. 1-30	20		
India	Oct. 10-30			Cases, 1,865; deaths, 536.
Bombay	Nov. 7-Dec. 4	11	8	
Calcutta	Oct. 31-Nov. 20	16	14	
Madras	Nov. 21-Dec. 11	7	1	
Indo-China	July 1-31			Cases, 29; deaths, 10.
Province—				
Annam	July, 1926	6	3	July, 1925: Cases, 30; deaths, 7.
Cambodia	do	11	4	July, 1925: Cases, 62; deaths, 18.
Cochin-China	do	6	1	July, 1925: Cases, 12; deaths, 7.
Laos	do	3	1	July, 1925: Cases, none.
Tonkin	do	3	1	July, 1925: Cases, 31; deaths, 3.
Iraq:				
Baghdad	Oct. 31-Nov. 6	1	1	
Basra	Nov. 7-13	1	1	
Italy	Aug. 29-Sept. 11	4		
Jamaica	Nov. 26-Dec. 25	34		Reported as alastrim.
Japan:				
Kobe	Nov. 14-20	1		
Java:				
Batavia	do	2		Province.
Surabaya	Oct. 24-Nov. 13	8	1	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

Reports Received from January 1 to 21, 1927—Continued

SMALLPOX—Continued

Place	Date	Cases	Deaths	Remarks
Mexico:				
Chihuahua	Dec. 31			Several cases; mild.
Ciudad Juarez	Dec. 14-27		2	
Mexico City	Nov. 21-Dec. 22	5		Including municipalities in Federal District.
San Luis Potosi	Nov. 12-Dec. 18		3	
Torreon	Nov. 28-Dec. 25		7	
Poland	Oct. 11-30			Cases, 30.
Portugal:				
Lisbon	Nov. 22-Dec. 18	37	3	
Rumania	Jan. 1-Sept. 30	7	1	
Siam	Apr. 1-Nov. 27			Cases, 691; deaths, 258.
Bangkok	Oct. 31-Nov. 27	13	3	
Tunisia	Oct. 1-20	1		
Union of South Africa:				
Cape Province—				
Stutterheim District	Nov. 21-27			Outbreaks.
Natal—				
Durban District	Nov. 7-27	9		Including Durban municipality. Total from date of outbreak, Oct. 14, 1926: Cases, 62; deaths, 16.
Orange Free State	Nov. 14-27			Outbreaks
Bothaville District	Nov. 21-27			Do.
Transvaal	Nov. 7-20	2		Europeans.
Johannesburg	Nov. 14-20	1		
Yugoslavia	Nov. 1-30	1	1	

TYPHUS FEVER

Algeria	Sept. 21-Oct. 20	12		
Bulgaria	July 1-Sept. 30	221	24	
Chile:				
Valparaiso	Nov. 21-Dec. 4	2		
China:				
Antung	Nov. 22-Dec. 5	4		
Chefoo	Oct. 24-Nov. 6			Present.
Chosen	Aug. 1-31	5		
Seoul	Nov. 1-30	1		
Greece	...do			Cases, 12.
Athens	...do	4		
Italy	Aug. 29-Sept. 11	1		
Lithuania	Sept. 1-30	12	2	
Mexico:				
Mexico City	Dec. 5-11	3		Including municipalities in Federal District.
Palestine:				
Haifa	Nov. 23-29	2		
Jaffa	...do	2		
Nazareth	Nov. 16-29	2		
Poland	Oct. 11-Nov. 13			Cases, 82; deaths, 8.
Rumania	Aug. 1-Sept. 30	72	3	
Russia	Aug. 1-31	1,156		
Tunisia	Oct. 1-20	3		
Union of South Africa	Oct. 1-30			Cases, 71; deaths, 8.
Cape Province	...do	47	7	
Do	Nov. 14-20			Outbreaks.
East London	Nov. 21-27	1		Native. Imported.
Natal	Oct. 1-31	1		
Orange Free State	...do	22	1	
Transvaal	...do	1		
Yugoslavia	Nov. 1-30	9		

YELLOW FEVER

Gold Coast	Aug. 1-31	7	2	
Senegal:				
Diourbel	Dec. 6	1	1	
Rufisque	Nov. 27	1	1	In European.
Upper Volta:				
Gaoua district	Oct. 25	2		